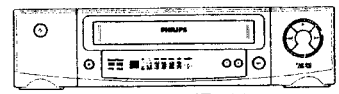
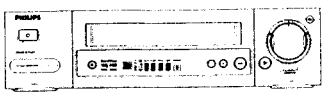
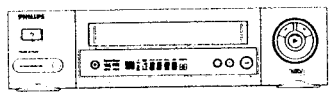
Video Cassette Recorder — Deck: Turbo Drive — APOLLO 11

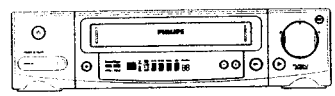
Service
Service
Service

VR200/02/05/07/39/58
VR205/02/05
VR250/02/07/39/58
VR400/02/39/58
VR450/02/39/58
VR600/02/07/13/16/39
VR605/02/07/13/16/39/58
SB230/02
SB630/02/13/16


VR200, VR400


VR605


VR600


VRx50, SB630

VR205, SB230

Service Manual

Evolution: AA

GB For chapters 2 and 4 reference is made to the Service Manual of QUEEN volume **4822 726 15512.**

D Für die Kapiteln 2 und 4 siehe Service Manual QUEEN volume **4822 726 15511.**

NL Voor de hoofdstuk 2 en 4 wordt verwezen naar de Service Documentatie van de QUEEN volume **4822 726 15514.**

F Pour ce qui est des chapitres 2 et 4 veuillez vous référer à la Documentation Service du QUEEN volume **4822 726 15513.**

I Per i capitoli 2 e 4 veda il Manuale di Servizio di QUEEN volume **4822 726 15515.**

E Para los capítulos 2 y 4 véase el manual de servicio de QUEEN volume **4822 726 15516.**

Survey of versions:

/02/03	PAL B/G, VPS/PDC
/05	PAL I, UK
/07	PAL I, Ireland
/11	PAL B/G Belgium
/13	PAL B/G, Nordic
/16	PAL B/G, Spain
/38/39	SECAM L/L', PAL B/G, PAL I
/58/59	PAL/SECAM B/G, D/K

Survey of remote controls:

VR200/02/05/07/58, VR205/02/05 VR250/02/07/58, VR400/02/58 VR450/02/58, VR600/02/07/13/16 VR605/02/07/13/16/58, SB230/02 SB630/02/13/16	**RT194/101GB**	4822 219 10724
VR200/39, VR250/39, VR400/39 VR450/39, VR600/39, VR605/39	**RT194/104FR**	4822 219 10725

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Veiligheidbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen identiek aan de gespecificeerde worden toegepast.

Le prescrizioni di sicurezza richiedono che l'apparecchio siaricondoto alle condizioni originali e che siano usati ricambi originali.

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utisées les piéces de rechange identiques à celles spécifiées.

Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de requesto sean idénticas a las originales.

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PCS 94130

PHILIPS

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Threading motor
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Roller unit right
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„Roller unit left; roller unit right"
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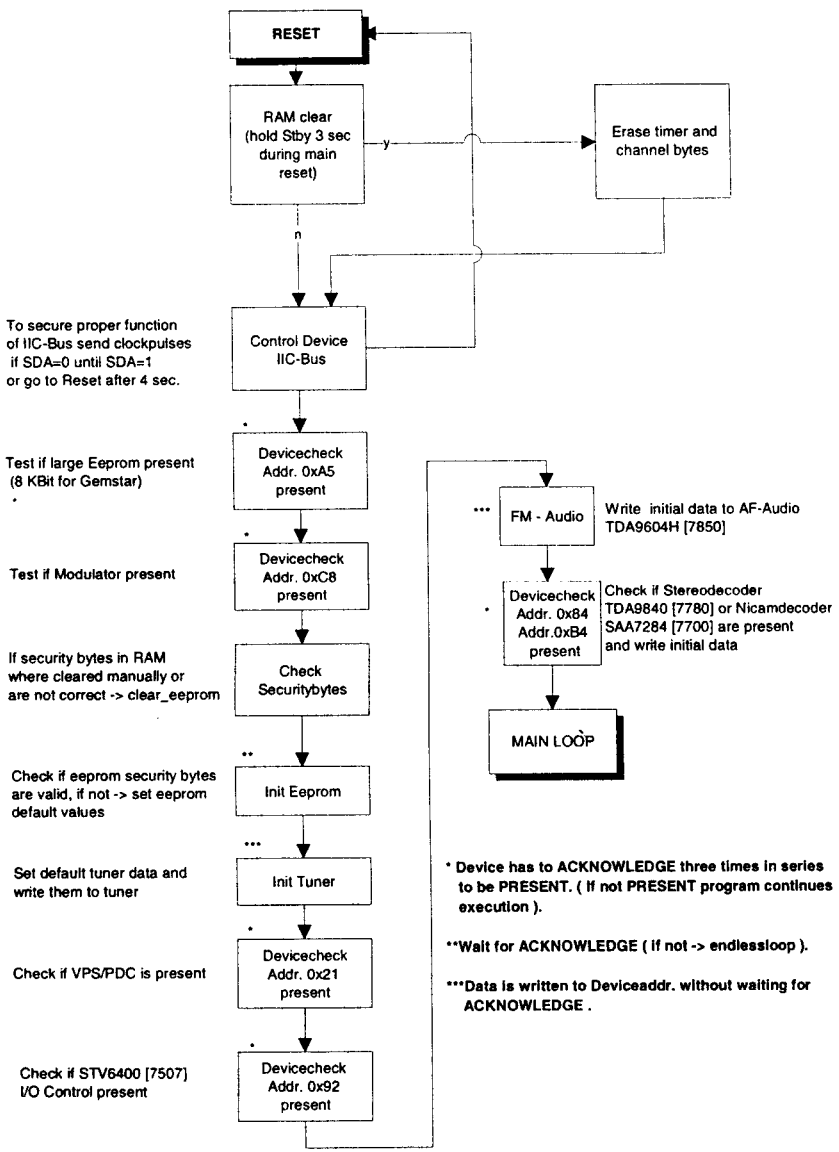
Features

	VR200/02	VR200/05	VR200/07	VR200/39	VR200/58	VR205/02	VR205/05	VR250/02	VR250/07	VR250/39	VR250/58	VR400/02	VR400/39	VR400/58	VR450/02	VR450/39	VR450/58	VR600/02	VR600/07	VR600/13	VR600/16	VR600/39	VR605/02	VR605/07	VR605/13	VR605/16	VR605/39	VR605/58	SB230/02	SB630/02	SB630/13	SB630/16
Genaral																																
Low power standby [W]	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6
Backup of presets	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr
Backup of clock / timer	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs
Tuning presets	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Number of events / month	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Systems																																
PAL BG	✓			✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
PAL I		✓	✓	✓			✓		✓	✓			✓			✓			✓			✓		✓			✓					
SECAM BG				✓	✓					✓	✓		✓	✓		✓	✓					✓					✓	✓				
SECAM L, L'				✓						✓			✓			✓						✓					✓					
PAL-SECAM DK					✓						✓			✓			✓											✓				
Sound system: mono	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sound system: stereo																		✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓
Sound system: Nicam																			✓	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓
Cable tuner hyperband	✓	UHF	✓	✓	✓	✓	UHF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modulator Ch 21 - 55	PalG	Pal I	Pal I	-	PalG/K	PalG	Pal I	PalG	Pal I	-	PalG/K,	PalG	-	PalG/K	PalG	-	PalG/K	PalG	Pal I	PalG	PalG	-	PalG	Pal I	PalG	PalG	-	PalG/K	PalG	PalG	PalG	PalG
Mechanism																																
Video heads:	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
FM-audio heads (for stereo)																		2	2	2	2	2	2	2	2	2	2	2		2	2	2
Rewind / Winding time E180 [sec]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Tape lenghts recognition automatic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Instant View	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tape counter: linear relative / time left	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VISS: next/prev. index / blank tape search	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Features																																
Longplay [8 h]		✓	✓				✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Autosearch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Follow TV (analog)				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Direct Record (analog)				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plug & Play	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Studio Picture Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NTSC playback with PAL 60Hz TV				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Daily/weekly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Show View (SV) / Video Plus+(V+)	SV	V+	V+	SV	SV	SV	V+	SV	V+	SV	SV	SV	SV	SV	SV	SV	SV	SV	V+	SV	SV	SV	SV	V+	SV	SV	SV	SV	SV	SV	SV	SV
OTR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VPS+PDC (VPDC)	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC
Time (VPDC) Date (PDC) download	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Record-prepared mode (from SCART 2)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OSD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Child lock						✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VCR1/VCR2 selection								✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Continuous playback	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audio dubbing	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Connectors																																
Audio out: cinch (rear)																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Audio / Video in: cinch (front)								✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Number of scart connectors	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Shuttle on front								✓	✓	✓	✓				✓	✓	✓						✓	✓	✓	✓	✓	✓		✓	✓	✓

urvey of sets and PCB`s with software versions

	AMB - MOTHERBOARD																Tape-Deck			
	-AMB layout -PS Power supply -HA Head amplifier -DE Deck electronics -DC Display control -VS Signal electronic -AL Audio linear -IO IN/OUT -VS-SEC Signal electronic -FV Frontend -AF Audio FM -OSD, FOME, VPS	µP - Versions												-CINCH Board rear	-ACP10 CINCH Board front	-ASP10 Shuttle Board	-QNIC NICAM Board				
		Deck Control-µP Pos. 7400	Display Control-µP Pos. 7201															2 video heads, PAL, SECAM	2 video heads, longplay PAL	4 video heads, PAL, SECAM	4 video, 2 audio heads, PAL, SECAM
Page 3 -	6 - 17	10	11											7/12	20	19	18	Chapter 4			
		ATDP4-xU	ADCM1-xP	ADCM2-xU	ADCM3-xU	ADCF1-xP	ADCF2-xU	ADCF3-xU	ADCH1-xP	ADCH2-xU	ADCH3-xU	ADCH4-xU	ADCH5-xU	CINCH rear	CINCH front	SHUTTLE	QNIC	WDQT-P2/0	WDQT-P2/0LP	WDQT-S4/0	WDQT-S4/2
VR200/02		✓		✓														✓			
VR200/05		✓	✓																✓		
VR200/07		✓	✓																✓		
VR200/39		✓		✓														✓			
VR200/58		✓			✓													✓			
VR205/02		✓		✓														✓			
VR205/05		✓	✓																✓		
VR250/02		✓					✓								✓	✓			✓		
VR250/07		✓				✓									✓	✓			✓		
VR250/39		✓					✓								✓	✓		✓			
VR250/58		✓						✓							✓	✓		✓			
VR400/02		✓		✓																✓	
VR400/39		✓		✓																✓	
VR400/58		✓			✓															✓	
VR450/02		✓					✓								✓	✓				✓	
VR450/39		✓					✓								✓	✓				✓	
VR450/58		✓						✓							✓	✓				✓	
VR600/02		✓								✓				✓	✓						✓
VR600/07		✓							✓					✓	✓		✓				✓
VR600/13		✓											✓	✓	✓		✓				✓
VR600/16		✓									✓			✓	✓		✓				✓
VR600/39		✓								✓				✓	✓		✓				✓
VR605/02		✓								✓				✓	✓	✓					✓
VR605/07		✓							✓					✓	✓	✓	✓				✓
VR605/13		✓											✓	✓	✓	✓	✓				✓
VR605/16		✓									✓			✓	✓	✓	✓				✓
VR605/39		✓								✓				✓	✓	✓	✓				✓
VR605/58		✓										✓		✓	✓	✓	✓				✓
SB230/02		✓		✓														✓			
SB630/02		✓								✓					✓	✓					✓
SB630/13		✓											✓		✓	✓	✓				✓
SB630/16		✓									✓				✓	✓	✓				✓

Start - up software from the display control - µP


RESET
RAM clear (hold Stby 3 sec during main reset)
y
Erase timer and channel bytes
n
To secure proper function of IIC-Bus send clockpulses if SDA=0 until SDA=1 or go to Reset after 4 sec.
Control Device IIC-Bus
Test if large Eeprom present (8 KBit for Gemstar)
Devicecheck Addr. 0xA5 present
Test if Modulator present
Devicecheck Addr. 0xC8 present
If security bytes in RAM where cleared manually or are not correct -> clear_eeprom
Check Securitybytes
Check if eeprom security bytes are valid, if not -> set eeprom default values
Init Eeprom
Set default tuner data and write them to tuner
Init Tuner
Check if VPS/PDC is present
Devicecheck Addr. 0x21 present
Check if STV6400 [7507] I/O Control present
Devicecheck Addr. 0x92 present
***
FM - Audio
Write initial data to AF-Audio TDA9604H [7850]
Devicecheck Addr. 0x84 Addr.0xB4 present
Check if Stereodecoder TDA9840 [7780] or Nicamdecoder SAA7284 [7700] are present and write initial data
MAIN LOOP

*** Device has to ACKNOWLEDGE three times in series to be PRESENT. (If not PRESENT program continues execution).**

****Wait for ACKNOWLEDGE (If not -> endlessloop).**

*****Data is written to Deviceaddr. without waiting for ACKNOWLEDGE .**

PCS 94133

(GB)

TECHNICAL DATA

Mains voltage	
Mains frequency	
Power consumption:	
without Low Power Standby	
with Low Power Standby	
Ambient temperature	
Relative humidity	
Dimensions	
Weight	
Fast forward/rewind time (turbo)	
Position of use	
Video resolution	
Audio	

(D)

TECHNISCHE DATEN

Netzspannung	
Netzfrequenz	
Leistungsaufnahme:	
Standby	
Standby mit geringem Verbrauch	
Raumtemperatur	
Relative Luftfeuchtigkeit	
Abmessungen	
Gewicht	
Vor-/Rückspulzeit (turbo)	
Betriebslage	
Video-Auflösung	
Audio	

(F)

CARACTERISTIQUES

Tension secteur	220 - 240 V, +/- 10%
Fréquence	45 - 65 Hz
Puissance absorbée:	mono 12.5 W during operatio
	HiFi 16 W during operation
mode veille normal	mono 9.5 W
	HiFi 11 W
mode veille faible consommation	< 6 W standby
Température ambiante	+10°C to +35°C
Humidité relative	20 - 80 %
Encombrement	380 x 260 x 94 mm
Poids	3,7 kg
Temps (re-)bobinage (turbo)	typ. 100s (E180 cass.)
Position d'emploi	horizontally, max. 15°
Puissance absorbée	≥240 lines
Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
Stereo FM Audio	20Hz - 20kHz (≤3dB)

(NL)

TECHNISCHE GEGEVENS

Netspanning	
Netfrequentie	
Opgenomen vermogen:	
zonder Low Power Standby	
met Low Power Standby	
Omgevingstemperatuur	
Relatieve vochtigheid	
Afmetingen	
Gewicht	
Vooruit/terugspoeltijd (turbo)	
Gebruiksposities	
Opplossend vermogen	
Audio	

(E)

DATOS TECNICOS

Tensión de red	
Frecuencia de red	
Consumo de potencia:	
sin standby de bajo consumo	
con standby de bajo consumo	
Temperatura ambiente	
Humedad relativa	
Dimensiones	
Peso	
tiempo de (re-)bobinado (turbo)	
Posición de uso	
Resolución video	
Audio	

(I)

DATI TECNICI

Tensione di alimentazione	220 - 240 V
Frequenza di rete	45 - 65 Hz
Potenza assorbita:	mono 12.5 W during operation
	HiFi 16 W during operation
in attesa non a basso consumo	mono 9.5 W during standby
	HiFi 11 W during standby
in attesa a basso consumo	< 6 W standby
Temperatura ambiente	+10°C to +35°C
Umidità relativa	20 - 80 %
Dimensioni	380 x 260 x 94 mm
Peso	3,7 kg
Tempo di (ri-)avvolgimento (turbo)	typ. 100s (E180 cass.)
Posizione di funzionamento	horizontally, max. 15°
Risoluzione video	≥240 lines
Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
Stereo FM Audio	20Hz - 20kHz (≤3dB)

Euroconnector (AV1) SCART plug 1

Connection to TV, monitor, projection TV ...

Pin 1	ARO (audio right out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 2	ARI (audio right in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 3	ALO (audio left out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 6	ALI (audio left in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 7	Blue (out) **)		
Pin 8	Switching output:	(with R_{load} = 10kOhm, C_{load} < 2nF) low: 2 V high: 9.5 V rise time: 5 ms	
Pin 11	Green (out) **)		
Pin 15	Red (out) **)		
Pin 16	Blanking (out) **)	loop through enabled during standby, view-mode	
Pin 19	CVBS II (video out)	1 V_{pp} +1/-2dB	R_{out} 75 Ohm
Pin 20	CVBS I (video in)	1 V_{pp} +3/-3dB	R_{in} 75 Ohm

**) passive loop through from AV2

Euroconnector (AV2) SCART plug 2

Connection to decoder, SAT tuner, video disc, 2nd VCR ....

Pin 1	ARO (audio right out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 2	ARI (audio right in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 3	ALO (audio left out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 6	ALI (audio left in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 7	Blue (in) *)		
Pin 8	Switching input only	low: 2 V (low) high: 4.5 V (high)	R_{in} 10 kOhm R_{in} 10 kOhm
Pin 11	Green (in) *)		
Pin 15	Red (in) *)		
Pin 16	Blanking (in) *)	loop through enabled during standby, view-mode	
Pin 19	CVBS II (video out)	1 V_{pp} +1/- 2dB	R_{out} 75 Ohm
Pin 20	CVBS I (video in)	1 V_{pp} +3/-3 dB	R_{in} 75 Ohm

*) passive loop through to Euroconnector AV1

Cinch Audio/Video input on front panel (OPTION)

Audio:

AINFR (audio right in) red	0.2 V_{rms} to 2 V_{rms}	typ. 500 mV_{rms}
AINFL (audio left in) white	0.2 V_{rms} to 2 V_{rms}	typ. 500 mV_{rms}
Input impedance	47 kOhm	

Video:

VFR yellow	1 V_{pp} + 3 / -3 dB
Input impedance	75 Ohm

Cinch Audio Out Rear (OPTION)

AOUT1R (audio right out) red	500 mV_{rms} +/- 3 dB R_{out} 1 kOhm
AOUT1L (audio left out) white	500 mV_{rms} +/- 3 dB R_{out} 1 kOhm

This outputs are in parallel with the corresponding outputs on Euroconnector 1.

TUMOD

Modulator:

Frequency range loop through	45 MHz - 860 MHz
Gain: ANT IN - TV OUT	2 dB + 3 / -2 dB
ANT IN - TUN OUT	2 dB + 3 / -2 dB
Switch for RF input attenuation	NO
Frequency range out (tuned by IIC bus)	Ch 21 - Ch55

Tuner:

Frequency range	43 MHz - 860 MHz
for UK	450 MHz - 860MHz
Input voltage max.	< 100 dBµV
min.	> 60 dBµV

PCS 77239

Safety instructions

- Safety regulations demand that the set be restored to its original condition and that components identical with the original types be used.

  Safety components are marked by the symbol ⚠

- All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair may reduce life drastically. When repairing, make sure that you are conneted with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools on the same potential.
- A set to be repaired should always be connected to the mains via a suitable isolating transformer.
- Never replace any modules or any other parts while the set is switched on.
- Use plastic instead of metal alignment tools. This in order to prelude short-circuit or to prevent a specific circuit from being rendered unstable.

Remarks

- The direct voltages and oscillograms ought to be measured relative to the set mass.
  EXCEPTION
  At the power supply, the DC voltages and the oscillograms at the primary side are measured to LIVE GND.
- The direct voltages and oscillograms mentioned in the diagrams ought to be measured with a colour bar signal and the picture carrier at 503.25 MHz (C25).
- The oscillograms and direct voltages have been measured in RECORD or PLAY mode.
- The semiconductors, which are mentioned in the circuit diagram and in the parts lists, are fully exchangeable per position with the semiconductors in the set, irrespective of the type designation of these semiconductors.

Sicherheitshinweise

- Die Sicherheitsvorschriften erfordern es, daß sich das Gerät nach der Reparatur in seinem originalen Zustand befindet und daß die zur Reparatur benutzten Ersatzteile mit den Originalersatzteilen identisch sind.

  Sicherheits-Bauteile sind mit der Markierung ⚠ versehen

- Alle IC's und Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorschriftmässige Behandlung von Halbleitern im Reparaturfall kann zur Zerstörung dieser Bauteile oder zu einer drastischen Reduzierung der Lebensdauer führen. Sorgen Sie dafür, daß Sie sich im Reparaturfall über ein Armband mit Widerstand auf dem gleichen Potential, wie die Masse des Gerätes befinden. Alle Bauteile, Werkzeuge und Hilfsmittel sind auf das gleiche Potential zu legen.
- Ein zu reparierendes Gerät ist immer über einen Trenntransformator an die Netzspannung anzuschließen.
- Bei eingeschaltetem Gerät dürfen keine Module oder sonstige Einzelteile ausgetauscht werden.
- Zum Abgleich sind ausschließlich Kunststoffwerkzeuge zu benutzen (keine Metallwerkzeuge verwenden). Dadurch wird vermieden, daß ein Kurzschluß entstehen kann oder eine Schaltung instabil wird.

Anmerkungen

- Die Gleichspannung und Oszillogramme sind gegen Gerätemasse zu messen.
  AUSNAHME
  Beim Netzteil sind die Gleichspannungen und Oszillogramme auf der Primärseite gegen Live GND gemessen.
- Die Gleichspannungen und Oszillogramme angeführt in den Schaltbildern sollen unter folgenden Bedingungen gemessen werden: Farbbalkensignal, Bildträger auf 503.25 MHz (C25)
- Die Oszillogramme und Gleichspannungen sind in RECORD oder PLAY gemessen. Die in den Stücklisten aufgeführten Bauteile sind positionsweise voll auswechselbar gegen die Bauteile in dem Gerät, ungeachtet der etwaigen Typenbezeichnungen.

Avertissements

- Les normes de sécurité exigent qu'aprés réparation l'appareil soit remis dans son état d'origine et que soient utilisées les piéces de rechange identiques à celles spécifiées.

  Les composants de sécurité sont marqués ⚠

- Tout les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharger statiques (ESD). Leur longévité pourrait être considérablement écourté par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations s'assurer de bien être relié au méme potential que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.
- Toujours alimenter un appareil à réparer à travers un transfo d'isolement.
- Ne jamais remplacer les modules ni d'autres composants quand l'appareil est sous tension.
- Pour l'ajustage, utiliser des outils en plastique au lieu d'instruments métalliques. Ceci afin d'éviter les court-circuits et exclure l'instabilité dans certains circuits.

Observations

- La mésure des tensions continues et des oscillogrammes doit se faire par rapport à la terre de l'appareil.
  EXCEPTION
  Sur l'unité d'alimentation la tension continue et l'oscillogramme sont mesurés sur le côte primaire en Live GND.
- La mésure des tensions continues et des oscillogrammes figurant sur le schéma doit se faire dans un signal de barre couleur porteuse image sur 503.25 MHz (C25).
- Les oscillogrammes et tension sont mésurées en mode RECORD ou PLAY.
- Les semi-conducteurs indiqués dans le schéma de principe et à la liste des compostants, sont interchangeables par repère sur ce chassis avec les semi-conducteurs de l'appareil quelle que soit la désignation de type donnée sur ces semi-conducteurs.

Veiligheidsinstructies

- Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, indentiek aan de oorspronkelijke, worden toegepast.
  De veiligheidsonderdelen zijn aangeduid met het symbool ⚠
- Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor, dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.
- Sluit een apparaat dat gerepareerd wordt altijd via een scheidingstransformator aan op de netspanning.
- Verwissel nooit modules of andere onderdelen terwijl het apparaat is ingeschakeld.
- Gebruik voor het afregelen plastic i.p.v metalen gereedschap. Dit om mogelijke kortsluiting te voorkomen of een bepaalde schakeling instabiel te maken.

Opmerkingen

- De gelijksspanningen en oscillogrammen dienen gemeten te worden ten opzichte van de apparaat aarde.
- De gelijksspanningen en oscillogrammen vermeld in de schema's dienen gemeten te worden met een kleurbalkensignaal beelddraaggolf op 503.25 MHz (C25).
- De oscillogrammen en gelijksspanningen zijn in RECORD of PLAY mode gemeten.
- De halfgeleiders, die in het pricipeschema en in de stuklijsten, zijn vermeld, zijn per positie volledig uitwisselbaar met de halfgeleiders in het apparaat, ongeacht de typeaanduiding op deze halfgeleiders.

Avvertimenti

- Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.

  Componenti di sicurezza sono marcati con ⚠

- Tutti gli IC e semiconduttori sono sensibili a scariche elettrostatiche (ESD). Noncuranze durante la riparazione di semiconduttori possono danneggiarli o condurre ad una riduzione drastica della durata. Durante la riparazione assicurarsi di essere collegati allo stesso potenziale attraverso un bracciale di protezione contro scariche elettrostatiche. Inoltre tenere anche tutti i componenti e gli attrezzi a questo potenziale.
- Apparecchi da riparare bisogna collegarli sempre via un trasformatore isolante (separatore) alla tensione normale.
- Non scambiare moduli o altri componenti quando l'apparecchio è in funzione.
- Per l'accordo usare soltanto attrezzi di plastica (non usare attrezzi metallici). Cosí si evitano cortocircuiti e collegamenti instabili.

Osservazioni

- Misurare le tensioni continue e gli oscillogrammi riferiendosi alla massa dell'apparecchio.
  ECCEZIONE
  Le tensioni continue e gli oscillogrammi dall'alimentatore sono misurati sulla parte primaria contro GND-Live.
- Le tensioni continue e gli oscillogrammi indicati negli schemi di collegamento devono essere misurati secondo le condizioni seguenti: segnale barre colore, portante dell'immagine su: 503.25 MHz (C25).
- Gli oscillogrammi e le tensioni continue sono misurati in RECORD o PLAYBACK.
- I componenti indicati nelle liste sono intercambiabili con quelli nell'apparecchio nonostante l'eventuale denominazione di modelli.

Avisos

- Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de repuesto, utilizadas para la reparación, sean idénticas a las originales.

  Los componentes de seguridad estan marcados con ⚠

- Todos los IC y semiconductores son sensibles a descargas electrostáticas (ESD). Un tratamiento no conforme a las instrucciones de semiconductores en caso de reparación, podría llevar a la destrucción de estos componentes, o a una reducción drástica de la duración. Tenga cuidado de que, en caso de reparación, estar al mismo potencial que la masa del aparato, por una pulsera con resistencia. Ponga todos los componentes, herramientas y recursos al mismo potencial.
- Para reparar un aparato hay que conectarlo siempre a la alimentación a traves de un transformador de aislamiento.
- Cuando un aparato está en marcha no pueden ser cambiados módulos u otras piezas de repuesto.
- Para los ajustes hay que utilizar exclusivamente herramientas de plástico (nunca herramientas metálicas). Así se evitaran cortocircuitos y circuitos inestables.

Notas

- Hay que medir las tensiones continuas y los oscilogramas contra la masa del aparato.
  UITZONDERING:
  Bij het netgedeelte zijn de gelijkspanningen en oscillogrammen aan de primaire kant tegen Live GND gemeten.
- Las tensiones continuas y los osciloramas mencionados en los esquemas tienen que ser medidos de manera siguiente: señal barra de color portadora de imagen en 503.25MHz (C25)
- Los osciloramas y las tensiones continuas son medidas en „RECORD" y „PLAYBACK"
- Los componentes mencionados en las listas se los puede cambiar por los componentes en el aparato, a pesar de eventuales designaciones de tipos.

(GB) WARNING FOR LITHIUM BATTERIES!

Lithium batteries, if incorrectly used (excessive heat, wrong connection of terminals, short circuit represent a danger of explosion!
Lithium batteries must be replaced only by original spare parts.

(D) WARNHINWEIS ZU LITHIUM-BATTERIEN!

Bei fascher Handhabung (Überhitzung, Falschpolung oder Kurzschluß) der Lithium-Batterien besteht Explosionsgefahr!
Lithium-Batterien dürfen nur gegen Originalersatzteile getauscht werden.

(F) ATTENTION!

Pile au lithium.
Danger d'explosion si traitée incorrectement. Ne peut être remplacée que par un spécialiste (comme décrit dans les instructions de réparation).

(NL) OPGELET MET LITHIUM-BATTERIJEN!

Bij foutieve behandeling (oververhitting, foutieve poling of kortsluiting) van lithium-batterijen bestaat er explosiegevaar! Lithium-batterijen mogen slechts door originele onderelen vervangen worden.

(I) ATTENZIONE CON LE PILE AL LITIO!

In caso di utilizzo errato (surriscaldamento, errata posizione dei poli o cortocircuito) delle pile al litio consiste pericolo di esplosione!
Le pile al litio si possone soltituire solo con pezzi di ricambio originali.

(E) AVISO!

Bateria de litio.
Por una inadecuada intervención puede explotar.
Solo debe ser cambiada por una persona con conocimientos técnicos (como en la guía de reparación se describe).

(DK) ADVARSEL!

Lithium batteri. Eksplosionsfare.
Udskiftning ma kun foretages af en sagkyndig, og som beskrevet in servicemanualen.

(S) VARNING!

Eksplosionsfara vid felaktigt batteribyte!
Använd samma batterityp eller ekvivalent typ som rekommenderas av apparattillverkaren.

(SF) VAROITUS!

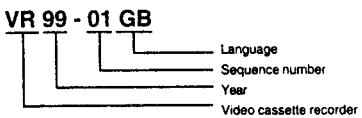
Paristo voi räjähtää, jos se on virheellisesti asennettu!
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.

Modifications

Description of the system used for publishing modification data and supplements to the service manual.

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.

Each Service information has a number, for example :



A Service Information bulletin concists of a front sheet, as the case may be followed by supplementary and/or replacement sheets.

Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are identified by an additional letter after the page number, for example 5-1a. Page 5-1a then takes the place of page 5-1.

Supplementary sheets are inserted between the existing sheets in the Service Manual. These sheets can be identified by an additional figure following the page number, for example 5-1-1.

Sheet 5-1-1 should be inserted after page 5-1.

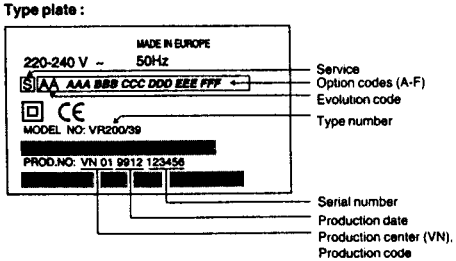
Description of the system by means of which modifications are indicated in the recorder.

All important parts of the recorder, such as tape deck, p.c. boards and modules, are provided with a sticker. These stickers specify a number of product data. The meaning of this data will now be explained for the most important sections.

The complete recorder

The type plate is located at the back of the recorder, below an example of such a type plate is given.

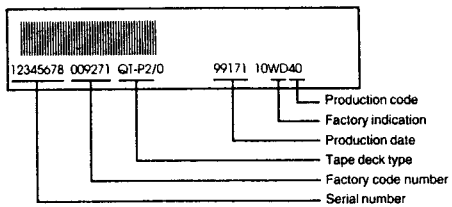
Type plate :



Note :

- In the case of an important modification to the recorder the production code on the type plate is increased by one. E.g. 01 becomes 02.
- In the case of an important modification to the service documentation the evolution code on the type plate is increased by one. E.g. AA becomes AB.

Tape deck



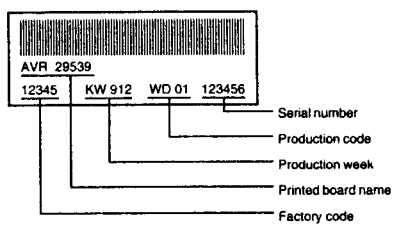
Note :

The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate.

Printed panels

The stickers are generally located on the track side of the module.

Example :



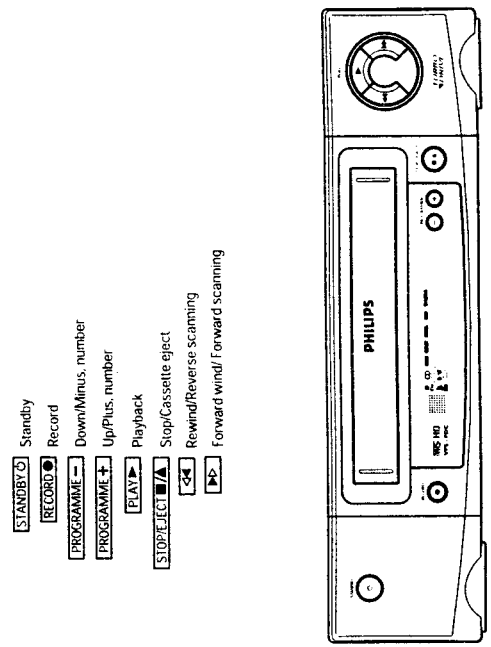
Remarks :

The production code number will not always be mentioned.

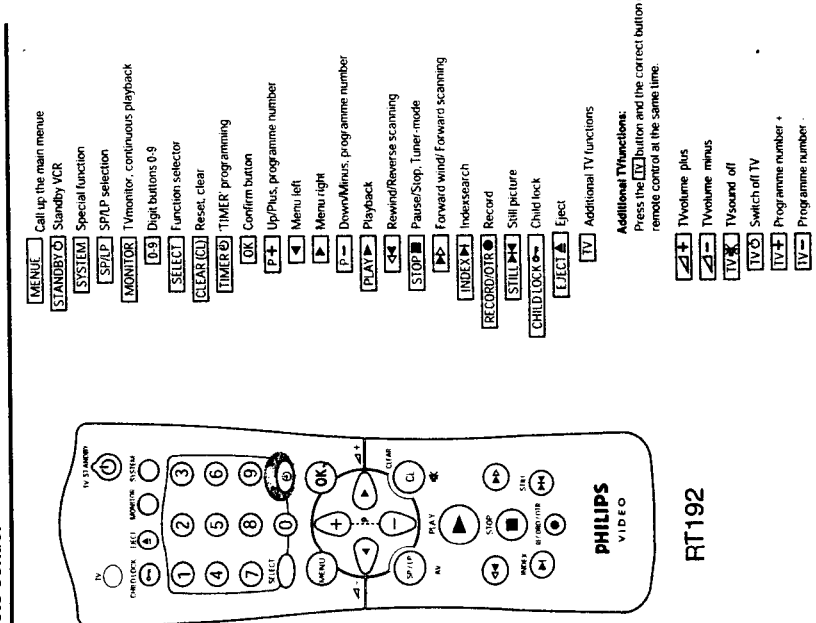
In case of an important modification, the last figure of the factory code number (point number) is increased by one. E.g. 6635.1 becomes 6635.2.

OPERATING INSTRUCTIONS IN BRIEF

Front of the video recorder

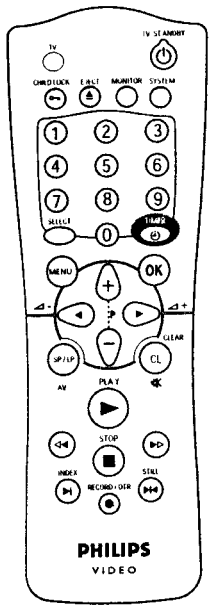


The remote control



OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT192

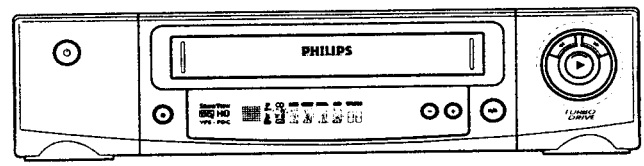
MENU Call up the main menue
STANDBY Standby VCR
SYSTEM Special function
SP/LP SP/LP selection
MONITOR TVmonitor, continuous playback
0-9 Digit buttons 0-9
SELECT Function selector
CLEAR (CL) Reset, clear
TIMER 'TIMER' programming
OK Confirm button
P+ Up/Plus, programme number
◄ Menu left
► Menu right
P− Down/Minus, programme number
PLAY Playback
Rewind/Reverse scanning
STOP Pause/Stop, Tuner-mode
Forward wind/ Forward scanning
INDEX Indexsearch
RECORD/OTR Record
STILL Still picture
CHILD LOCK Child lock
EJECT Eject
TV Additional TV functions

Additional TVfunctions:
Press the TV button and the correct button on the remote control at the same time.

TVvolume plus
TVvolume minus
TV TVsound off
TV Switch off TV
TV+ Programme number +
TV− Programme number -

Front of the video recorder

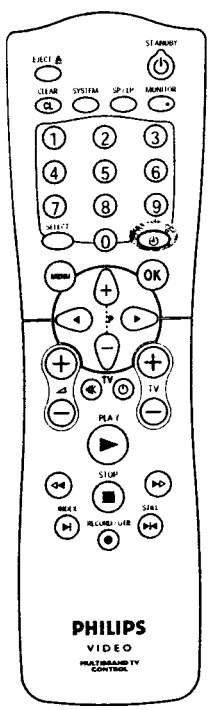
STANDBY Standby
RECORD Record
PROGRAMME − Down/Minus, number
PROGRAMME + Up/Plus, number
PLAY Playback
STOP/EJECT Stop/Cassette eject
Rewind/Reverse scanning
Forward wind/ Forward scanning



VR205, SB230

OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT193

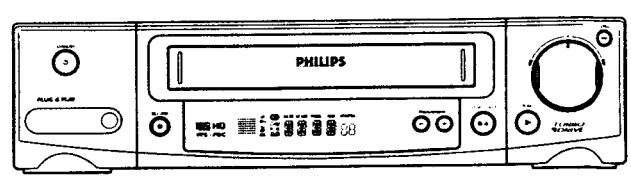
MENU Call up the main menue
STANDBY Standby VCR
SYSTEM Special function
SP/LP SP/LP selection
MONITOR TVmonitor, continuous playback
0-9 Digit buttons 0-9
SELECT Function selector
CLEAR (CL) Reset, clear
TIMER 'TIMER' programming
OK Confirm button
P+ Up/Plus, programme number
◄ Menu left
► Menu right
P− Down/Minus, programme number
PLAY Playback
Rewind/Reverse scanning
STOP Pause/Stop, Tuner-mode
Forward wind/ Forward scanning
INDEX Indexsearch
RECORD/OTR Record
STILL Still picture
EJECT Eject

Additional TVfunctions:

TVvolume plus
TVvolume minus
TV TVsound off
TV Switch off TV
TV+ Programme number +
TV− Programme number -

Front of the video recorder

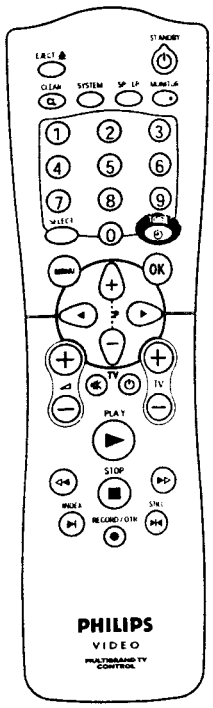
STANDBY Standby
RECORD Record
PROGRAMME − Down/Minus, number
PROGRAMME + Up/Plus, number
PLAY Playback
STOP/EJECT Stop/Cassette eject
SHUTTLE ON/ STILL Still picture
Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning



VRx50, SB630

ERATING INSTRUCTIONS IN BRIEF

e remote control



RT193

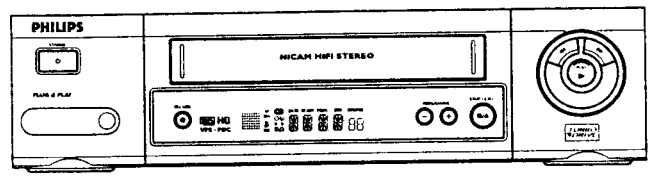
MENU Call up the main menue
STANDBY Standby VCR
SYSTEM Special function
SP/LP SP/LP selection
MONITOR TVmonitor, continuous playback
0-9 Digit buttons 0-9
SELECT Function selector
CLEAR (CL) Reset, clear
TIMER 'TIMER' programming
OK Confirm button
P+ Up/Plus, programme number
Menu left
Menu right
P− Down/Minus, programme number
PLAY Playback
Rewind/Reverse scanning
STOP Pause/Stop, Tuner-mode
Forward wind/ Forward scanning
INDEX Indexsearch
RECORD/OTR Record
STILL Still picture
EJECT Eject

Additional TVfunctions:

TVvolume plus
TVvolume minus
TVsound off
TV Switch off TV
TV+ Programme number +
TV− Programme number -

Front of the video recorder

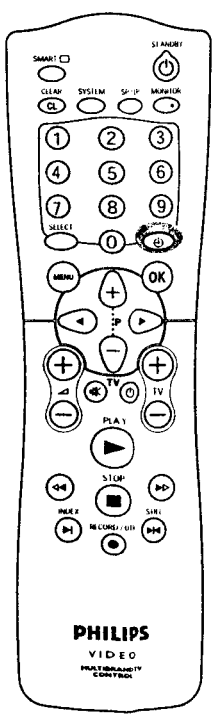
STANDBY Standby
RECORD Record
PROGRAMME − Down/Minus, number
PROGRAMME + Up/Plus, number
PLAY Playback
STOP/EJECT Stop/Cassette eject
Rewind/Reverse scanning
Forward wind/ Forward scanning



VR600

OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT194

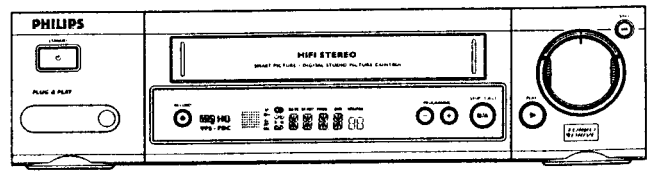
MENU Call up the main menue
STANDBY Standby VCR
SYSTEM Special function
SP/LP SP/LP selection
MONITOR TVmonitor, continuous playback
0-9 Digit buttons 0-9
SELECT Function selector
CLEAR (CL) Reset, clear
TIMER 'TIMER' programming
OK Confirm button
P+ Up/Plus, programme number
Menu left
Menu right
P− Down/Minus, programme number
PLAY Playback
Rewind/Reverse scanning
STOP Pause/Stop, Tuner-mode
Forward wind/ Forward scanning
INDEX Indexsearch
RECORD/OTR Record
STILL Still picture
SMART Smart picture

Additional TVfunctions:

TVvolume plus
TVvolume minus
TVsound off
TV Switch off TV
TV+ Programme number +
TV− Programme number -

Front of the video recorder

STANDBY Standby
RECORD Record
PROGRAMME − Down/Minus, number
PROGRAMME + Up/Plus, number
PLAY Playback
STOP/EJECT Stop/Cassette eject
SHUTTLE ON/ STILL Still picture
Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning



VR605

Remarks:

SERVICE MODES

For service modes in D, F, NL, I or E language, to refer Service Manual of QUEEN volume 4822 726 *15511* till *15516*.

1. Special functions

1.1 Erasing the EEPROM

- Disconnect from mains

- Push and hold down the Standby key, reconnect to mains and keep the Standby key depressed for a further 3 sec.

All EEPROM data will then be erased and initialised (timer and transmitter channels). The internal processor RAM will also be erased, but the option codes, deck parameters and adjustment values are maintained.

1.2 After changing the EEPROM or Motherboard

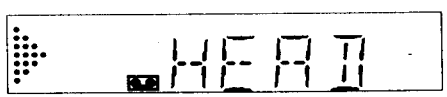
the following steps must be carried out:

Step 40: Option code input
Step 51: Gap position adjustment
Step 52: 'Studio Picture control' adjustment
Step 53: Input of clock correction
Step 60: Level adjustment - Stereo (optional)
Step 61: Channel separation adjustment - Stereo (optional)
Step 62: Adjustment of Audio Linear Playback Level (optional)
Step 99: Clock frequency output

1.3 Video head cleaning

With the recorder set to PLAY, the video heads can be cleaned by pressing the PLAY key again for more than 5 sec. The recorder then moves to STOP and the video head cleaning roll is pressed against the running head drum for 10 sec. The recorder automatically returns to PLAY.

The display shows:



2. Service test program

2.1 Introduction

The software program for the control, deck and operating microprocessors includes a service test program. It was divided into the following steps, with the following 'modes':

Step 00: Display of mask version number
Step 01: Check of the drive positions
Step 02: Display of the deck - error codes
Step 03: Deck - sensors and manual tracking
Step 04: Display of operating hours counter
Step 10: Operation without drive - dummy mode
Step 40: Option code input

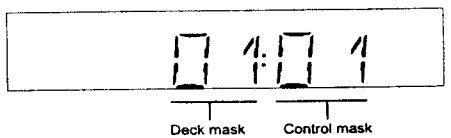
Adjustment Steps:
Step 51: Gap position adjustment
Step 52: 'Studio Picture control' adjustment
Step 53: Input of clock correction
Step 60: Level adjustment - Stereo (optional)
Step 61: Adjustment of channel separation - Stereo (optional)
Step 62: Adjustment of Audio Linear Playback Level (optional)
Step 99: Clock frequency output

In the service test program, all drive functions apart from the channel search and channel change mode can be carried out. The program position set **before** entering the service test program is maintained.

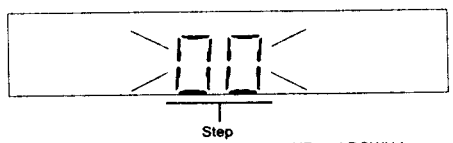
2.2 Activating the service test program

Press and hold down the STOP key on the remote control. Then press the PLAY key on the recorder and keep it depressed for at least 5 sec. The STOP key on the remote control may be released whilst the PLAY key on the recorder is pressed.
The service test program can be selected in any operating mode apart from the channel search, install, clock set-up and cassette length calculation mode. The recorder and all drive functions are fully operational in the service mode.

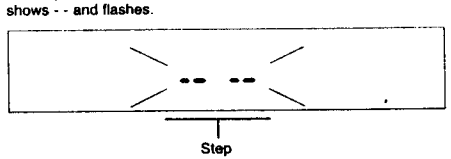
The display shows, for instance:



By pressing the SELECT key on the remote control, all step modes may be left and the currently selected step number appears and flashes.



Other service steps are selected with the UP and DOWN keys or the numerical remote control keys. By pressing the SELECT key on the remote control whilst the Step is flashing, the respective mode can be entered or left.
If a step is selected to which no mode is assigned, the displays shows - - and flashes.



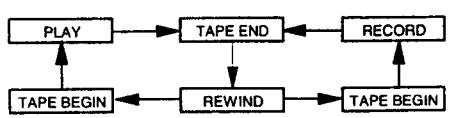
To leave the service program, press the STAND-BY key or disconnect recorder from mains.

2.3 Service mode functions

Endurance test

In the service test program, the recorder can be endurance tested. For this purpose, use a cassette and activate "PLAY" or "REC". The functions are then repeated continuously. In RECORD, the recorder does not move to EJECT at the tape end, but to REWIND, after which it starts to RECORD again. This test serves to detect intermittent faults. The last error is stored in the EEPROM. (The fault remains stored even after a power failure).

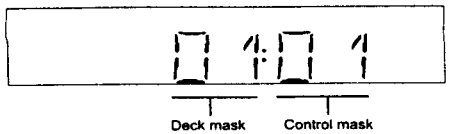
The endurance test is ended by pressing STOP or leaving the service test program.



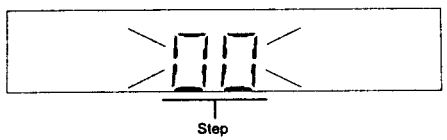
2.4 Description of steps with modes:

Step 00: Display of mask version number

After activating the service test program, step 00 and the mask version number are automatically displayed.



The mode can be left again by pressing the SELECT key on the remote control. The currently selected position number appears and flashes on the display.



A step between 00 and 99 can now be selected.

Step 01: Checking the drive positions

By pressing the SELECT key whilst Step 01 is flashing, the drive position appears on the display.
The FTA signal from the photoelectric barriers which controls the revolutions of the loading motor is used to check the drive condition.
The drive position is shown as a 3-digit decimal number by counting the FTA pulses on the display.

(e.g. 213 = Play)

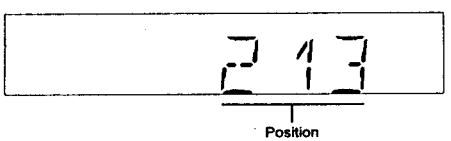
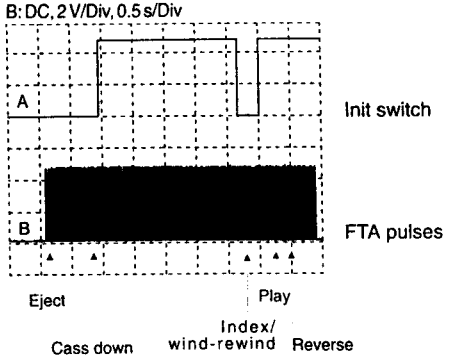


Table of drive positions:

Status	Position (FTA dec)
Eject	007 +2/-2
Index	191 +0/-2
Stop	200 +4/-4
Play	213 +4/-4
Reverse	237 +2/-0

Function of the Init switch:
The diagram shows the function of the Init switch, depending on the position of the deck. The number of FTA pulses is important for the position of the drive.

A: DC, 2 V/Div, 0.5 s/Div
B: DC, 2 V/Div, 0.5 s/Div



Step 02: Display of the deck error codes

By pressing the SELECT key whilst Step 02 is flashing, the deck error code is shown on the display.

Checking the drive function
Loading and unloading time
The signal (FTA) of the photoelectric barrier which controls the revolutions of the loading motor is used as a reference for the loading and unloading time.

Stopping of supply or take-up reels
The tacho signals of the left (WTL) and right (WTR) winding disks are used as control reference.

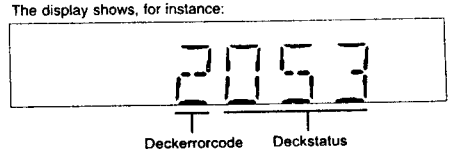
Stopping of head drum motor
This is monitored with the PG/FG signal. The signal is discharged from the e.m.f. of the non-conducting spools of the head cylinder motor, showing the position of the head cylinder.

Capstan motor fault
This is monitored with the FGD signal.

If one of the above sensor signals is not available, the recorder tries to put the lift into the "EJECT" position.

Explanation of deck error codes and deck error status
The last error code is stored and remains in the EEPROM, even if the recorder is disconnected from the mains.
The error code can be **erased** by pushing the CLEAR button on the remote control.

The display shows, for instance:



The left digit shows the error:
(e.g.: Error 2 = Capstan error)

Error table:

0	no error
1	threading error
2	no capstan pulses
3	tape broken
4	no pulses left reel
5	no pulses right reel
6	head motor error

The 3 digits on the right represent the deck error condition:
(e.g.: 053 = during Play)

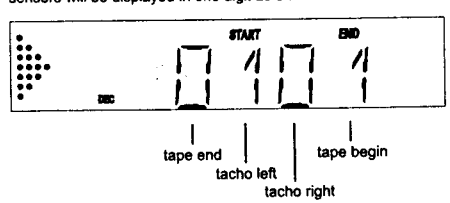
Functiontable:

012	Standby	114	VISS write	211	Slowmotion 1/24
014	Autotracking	115	Viss erase	212	" " 1/14
031	Play-3	125	Tuner - Stopout	215	" " 1/7
034	Slow_reverse	126	Auto Remain Funct.	216	" " 1/2
041	Still Picture	130	ATTS Function	217	" " -1/24
042	Fast	168	Frame+	218	" " -1/14
044	Play-9	169	Frame-	219	" " -1/7
045	Eject	170	Play-11	220	" " -1/2
046	Play9	171	Play-7	222	Edit Record
047	Play-1	172	Play-5	223	Align of Gap
048	Pause	173	Play5	238	Pause
050	Rewind	174	Play7	239	SPC align
052	Wind	175	Play11	246	Edit Pause
053	Play	196	Tuner - Eject	247	Slow motion 1/10
054	Stop out	197	Standby Eject	248	" " 1/18
055	Record	199	Audio Dubbing	249	" " -1/10
112	Index next	202	Audio Dubb. Pause	250	" " -1/18
113	Index previous	206	Reset Tapecounter	253	Key Released

The error code can be reset in this step with the CLEAR key.

Step 03: Deck sensors and manual tracking

By pressing the SELECT key whilst step 03 is flashing, the deck sensors will be displayed in one digit as either 1 or 0.

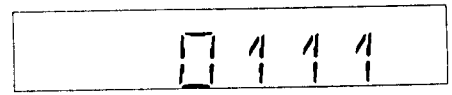


■● ◀▶ are used to display the deck status.
START init switch (INIT)
END record protection (RECP)
DEC Loading pulses (FTA)

In the service test program, the tracking is always in the centre position.
Only in this step can the value for the required tape running setting be changed, manually in the PLAY function with the UP / DOWN keys.
After leaving the mode with the SELECT key, the tracking value always resets itself to the centre position and cannot be changed.

Step 04: Display of the operating hours counter:

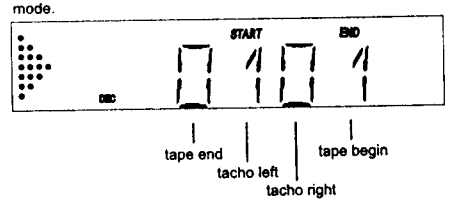
By pressing the SELECT key whilst step 04 is flashing, the operating hours counter shows how many hours the head disk has turned. The hours are displayed as a 4-digit decimal number.



Step 10: Operation without drive - dummy mode

Before activating this mode with the SELECT key, the recorder must be in the EJECT position.

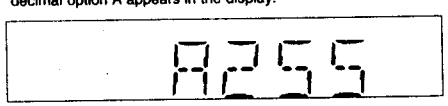
Enter the mode by pressing the SELECT key. The motors are then switched off and the sensors will be ignored by the deck microprocessor. The drive can now be dismantled from the motherboard (see dismantling instructions). **Only install drive if recorder is disconnected from mains.** For signal tracking, the recorder can be set to all drive conditions, i.e. signal electronics, audio and IO processing are switched to the respective operating mode.



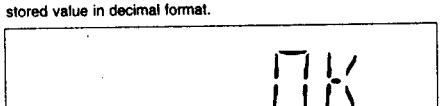
■● ◀▶ are used to show the deck status
START init switch (INIT)
END record protection (RECP)
DEC loading pulses (FTA)

Step 40: Option code input

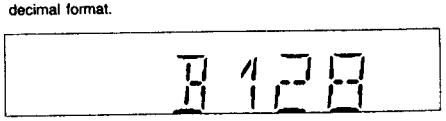
If a new EEPROM is installed in the course of repairs, it must be initialised.
By pressing the SELECT key whilst step 40 is flashing, the decimal option A appears in the display.



By entering a 3-digit decimal code, the correct features are set. **These codes are shown on the type-plate of the recorder.** After pressing the OK key on the remote control, the entered code is saved. The display shows OK for approx. 3 sec. and then the stored value in decimal format.



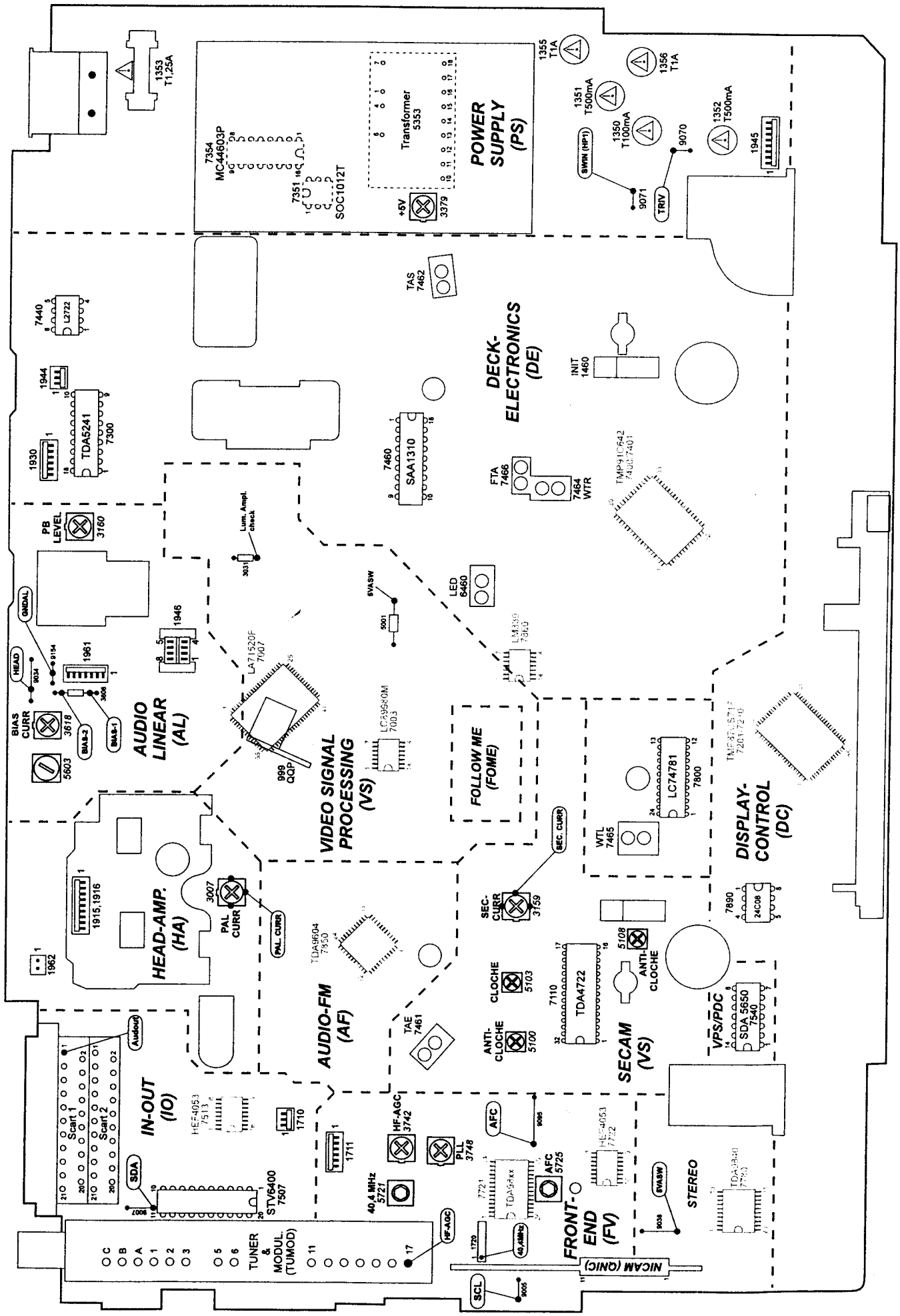
By pressing the UP and DOWN keys, the available options (A to F) can be selected. The display shows the last stored value in decimal format.



In case of an invalid entry (value >255) the activation of the OK key causes the content of the last stored option to be displayed and OK does not appear in the display.

Depending on the model, some bits are software or default protected and cannot be changed by an entry. In this case, the display shows OK, but the display returns to the **default value.**

Connecting points of measuring equipment



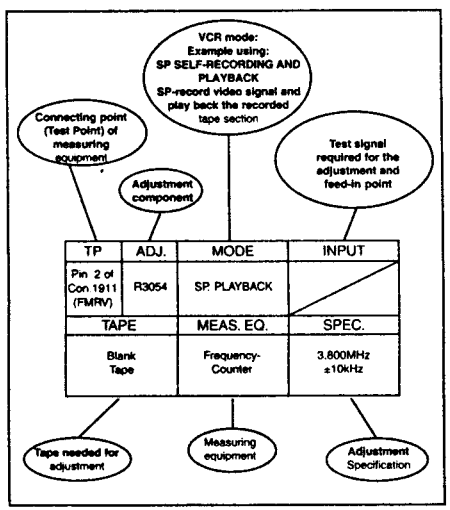
ADJUSTMENT INSTRUCTIONS

For adjustment instrucions in D, F, NL, I or E language, to refer service manual of QUEEN volume 4822 726 *15511* till *15516*.

Test equipment:

1. Dual-trace oscilloscope
   Voltage range : 0.001 ~ 50 V/div
   Frequency : DC ~ 50 MHz
   Probe : 10:1, 1:1
2. DVM (Digital voltmeter)
3. Frequency counter
4. Sinus generator
   Sinus : 0 ~ 50 MHz
5. Test pattern generator
6. VHS Alignment Tape 4822 397 30103
   SPC Alignment Tape 4822 397 30268

How to read the adjustment procedures:



1. Power supply - AMB (PS)

Service tasks after repairing the power supply:

1.1 Setting the output voltage +5VASW [3379]:

Purpose: To set the correct supply voltage.

Symptom, if incorrectly set:
VCR functions are not operating correctly.

TP	ADJ.	MODE	INPUT
wire +5VASW	R3379	Playback	
TAPE		MEAS. EQ.	SPEC.
Any tape		DC Voltmeter	5,3V ±0.03V

2. Video signal processing-AMB (VS,AL,I/O)

Service tasks after replacement of ICs 7007, 7110:

Purpose: To set the optimum record PAL or SECAM chroma level.

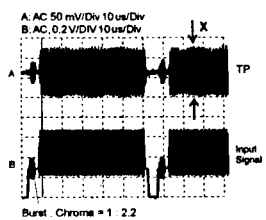
Symptom, if incorrectly set:
If the record level is too high, beats may appear on the picture. If the level is too low, the colour may be degraded.
Before commencing adjustment:
Call the service test program and enter Step 10 (Dummy mode). Remove the drive from the motherboard.
Control the luminace amplitude on TP R3031:

TP	ADJ.	MODE	INPUT
Pos. R3031 (emitter side)		Dummy mode Record Preset E1	(VIDEO IN E1) Red Picture PAL 75% Saturation
TAPE		MEAS. EQ.	SPEC.
Blank Tape		Oscilloscope Video Pattern Generator	420 mV_{pp} ± 40 mV_{pp}

2.1 PAL chrominance record current adjustment [3007]:

Connect resistor R3031 on the emitter side (T7006) with 5VASW of coil L5001.

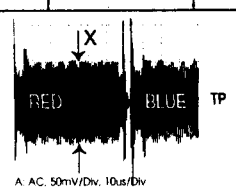
TP	ADJ.	MODE	INPUT
Pos. R3007 (slider)	R3007	Dummy mode Record Preset E1	(VIDEO IN E1) Red Picture PAL 75% Saturation
TAPE		MEAS. EQ.	SPEC.
Blank Tape		Oscilloscope Video Pattern Generator	X=160 ± 20 mV_{pp}, for 2 heads VCR X=130 ± 20 mV_{pp}, for 4 heads VCR



2.2 SECAM chrominance record current adjustment [3159]:

Connect resistor R3031 on the emitter side (T7006) with 5VASW of coil L5001.

TP	ADJ.	MODE	INPUT
Pos. R3159 (slider)	R3159	Dummy mode Record of Preset E1	(VIDEO IN E1) Red Picture SECAM 75% Saturation
TAPE		MEAS. EQ.	SPEC.
Blank Tape		Oscilloscope Video Pattern Generator	X=210 ± 30 mV_{pp}, measured in red line



3. Front End - AMB (VS, AL, I/O)

Service tasks after replacement of ICs 7720, 7721, coil L5725 and TUMOD:

3.1 AFC Adjustment:

Purpose: Correct adjustment of demodulator AFC - circuit

Symptom, if incorrectly set:
Bad or disturbed TV channel reception.

3.1.1 PAL - AFC adjustment [5725]:

TP	ADJ.	MODE	INPUT
IC 7720 Pin 15 (TP9095)	L5725	E to E	38,9MHz 500mV$_{pp}$ at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		DC Voltmeter Frequ. Generator	2,5V ±0,2V

3.1.2 PAL/SECAM - AFC adjustment [5725] :

TP	ADJ.	MODE	INPUT
IC 7721 Pin 20 (TP9095)	L5725	E to E	38,9MHz 500mV$_{pp}$ at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		DC Voltmeter Frequ. Generator	2,5V ±0,2V

3.2 SECAM band 1 - AFC adjustment [3748]: (SECAM L / L' only)

Before commencing adjustment:

-- Switch VCR to SECAM with SYSTEM key.

TP	ADJ.	MODE	INPUT
IC 7721 Pin 20 (TP9095)	R3748	E to E, SECAM L' tuned on this preset	33,9MHz 500mV$_{pp}$ at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		DC Voltmeter Freq. Generator	2,5V ±0,2V

3.3 Phase offset adjustment [3748]: (TDA9800T only)

After replacement of the IC TDA9800T [7720], the potentiometer pos. 3748 has to be removed from the motherboard. The demodulator IC TDA9800T [7720] is automatically adjusted to a default value.

3.4 HF - AGC adjustment [3742]:

Service tasks after replacement of ICs 7720, 7721 or TUMOD:

Purpose: Set amplifier control.

Symptom, if incorrectly set:
Picture jitter if input level is too low and picture distortion if input level is too high.

TP	ADJ.	MODE	INPUT
Tuner 1701 Pin 17	R3742	Set tuned to channel 27	4,5mV(74dBµV) on aerial input PAL white picture, audio IF on, no modulation
TAPE		MEAS. EQ.	SPEC.
		Oscilloscope Video Pattern Generator	550mV$_{pp}$ +/-50mV (use a 10:1 probe)

3.5 Attenuating the 40.4 MHz [5721]: (SECAM only)

Service tasks after replacement of coil 75721:

Purpose: To attenuate the band I carrier rests.

Symptom, if incorrectly set:
Bad picture quality when the filter attenuates the picture carrier (38.9MHz).

TP	ADJ.	MODE	INPUT
OFW 1720 Pin 1	L5721	E to E	40.4 MHz, 300mV$_{rms}$ at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		Oscilloscope, Sinus Generator, Counter	adjust minimum amplitude

If the adjustment is correct the signal at pin 1 of SFW [1720] must be smaller than the input signal amplitude by at least 5 dB.

4. Deck electronics - AMB (DE, DC)

Service tasks after replacement of the head drum or EEPROM

4.1 Setting the gap position (GAP):

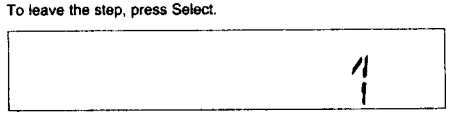
Purpose: To determine the correct head switching point during playback.

Symptom if incorrectly set:
Head switching fault and/or vertical picture flickers.

- Enter the service test program and, whilst step display is flashing, enter the step number 51, using the numerical keys.
- Insert a test cassette (e.g. 4822 397 30103) with the standard video signal in the VCR.
- By pressing the SELECT key whilst **step 51** is flashing, the automatic adjustment is triggered and stored in the EEPROM .

TP	ADJ.	MODE	INPUT
		Stop Service Mode	
TAPE		MEAS. EQ.	SPEC.
VHS Alignment Tape			Call up Step 51 of Service Mode

After a correct adjustment, the display shows 1; 0 when incorrect.
To leave the step, press Select.



Causes of incorrect adjustment :
Incorrect standard video signal.
Scanner fault.
Microprocessor fault.

4.2 "Studio Picture control" adjustment (SPC):

Purpose: Adjustment of the reference level for the SPC.

Symptom if incorrectly set:
The picture is played back at a lower resolution than would be possible.

TP	ADJ.	MODE	INPUT
		Stop Service Mode	RF or A1- input, black picture without BURST
TAPE		MEAS. EQ.	SPEC.
SPC Alignment Tape			Call up Step 52 of Service Mode

- Video signal via Scart or aerial
- Enter the service test program and, whilst the step is flashing, input the step number 52, using the numerical keys.
- Insert cassette (not a SVHS cassette).
- By pressing the SELECT key whilst **step 52** is flashing, the recorder makes a recording in SP mode (approx. 10 sec.) and in LP mode (approx. 10 sec.), rewinds and carries out a playback with automatic adjustment.
- After a correct adjustment the display shows 1, and 0 for incorrect adjustments.

To leave the step press SELECT.

5. Audio linear - AMB (VS, AL, I/O)

Service tasks after replacement of coil L5603, IC7007 or the audio heads:

5.1 Adjusting the erasing frequency [5603]:

Purpose: To set the correct recording erasing frequency.

Symptom, if incorrectly set:
Erasing frequency or its harmonics cause audio faults.

TP	ADJ.	MODE	INPUT
wire 9034 (HEAD)	L5603	Set tuned to channel 27 Record	PAL white picture, audio IF and modulation on
TAPE		MEAS. EQ.	SPEC.
Blank Tape		Frequency Counter	70kHz ±10kHz

5.2 Adjustment of playback amplitude [3160]: (only for mono sets without front plugs)

Purpose: To set audio part amplification

Symptom, if incorrectly set:
Playback sounds too faint or too loud.

TP	ADJ.	MODE	INPUT
Pin 1 of Scart 1 (Audout)	R3160	SP Self-recording and Playback	(Video white picture) Audio in Scart 1, 700mV$_{RMS}$ 1kHz
TAPE		MEAS. EQ.	SPEC.
Blank Tape		AC Millivoltmeter, Video Pattern Generator	500mV$_{RMS}$ ±50mV

5.3 Adjustment of bias current [3618]:

Purpose: To set the optimum record bias current.

Symptom, if incorrectly set:
If the audio level is too high, the higher frequencies of the linear sound are too low.
If the level is too low, the higher frequencies are too strong and sound distortions inrease.

TP	ADJ.	MODE	INPUT
R3606 (difference measurement BIAS1 - BIAS2)	R3618	Set tuned to channel 27 Record	PAL white picture, audio IF and modulation on
TAPE		MEAS. EQ.	SPEC.
Blank Tape		AC Millivolmeter	15mV$_{RMS}$ ±1mV$_{RMS}$ (70kHz)

Checking the 'bias' adjustment:

After the bias has been adjusted to the indicated level, record some music, play back the recording, and adjust the audio switch to "MONO".
Only use brand name cassettes, but not chrome dioxide tapes.
Check if sufficient treble is reproduced and for any audio distortion.
In case of insufficient treble, reduce 'bias' current a little. In case of excessive distortion, increase 'bias' current a little.

6. Stereo demodulator TDA9840 - AMB (FV) (only for stereo sets)

Service tasks after replacement of IC7780 or the EEPROM:

6.1 Stereo level adjustment [7780]:

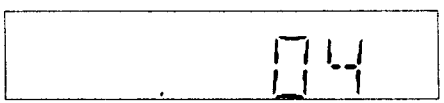
Purpose: Amplification adjustment of stereo demodulator TDA9840 [7780].

Symptom if incorrectly set:
Sound is too low or too loud

- Enter the service test program and, whilst step display is flashing, enter the step number 60, using the numerical keys.

TP	ADJ.	MODE	INPUT
Pin 1 of Scart 1 (Audout)	refer to description	Stop Service mode call up Step 60	RF - input,white picture,1kHz sound only on right channel +/-27kHz deviation
TAPE		MEAS. EQ.	SPEC.
		AC Millivoltmeter Video Pattern Generator	500mV$_{RMS}$ ±50mV

By pressing the SELECT key whilst **step 60** is flashing, the output select is switched to stereo and the display shows, for instance:



- Connect the millivoltmeter to Scart1 pin1(Audio out right).
- The level on Scart 1, Pin1 (Audio out) can be adjusted to the set value by pressing the UP (value increases) or DOWN key (value decreases).
  (The amplitude changes by 0.5 dB each time the key is pressed).
  The range is shown in the display with the numbers 1-9.
- The value is automatically stored in the EE-PROM each time the key is depressed.

After leaving the step with SELECT, the last value will be stored in the EE-PROM.

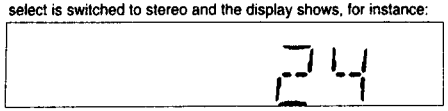
6.2 Adjustment of stereo channel separation [7780]:

Purpose: Adjustment of channel separation of the stereo demodulator TDA9840 [7780].
Symptom if incorrectly set:
Crosstalk between left and right channel.

- Enter the service test program and, whilst step display is flashing, enter the step number 61, using the numerical keys.

TP	ADJ.	MODE	INPUT
Pin 3 of Scart 1 (Audout left)	refer to description	Stop Service mode call up Step 61	RF - input,white picture,1kHz sound only on right channel +/-27kHz deviation
TAPE		MEAS. EQ.	SPEC.
		AC Millivoltmeter or Oszilloscope, Video Pattern Generator	lowest value

By pressing the SELECT key whilst **step 61** is flashing, the output select is switched to stereo and the display shows, for instance:



- Connect Millivoltmeter to Scart1 Pin 3 (Audio out left).
- The noise amplitude on Scart 1 Pin 3 (Audio out left) can be adjusted to the lowest value by pressing the UP(+) or DOWN (-) keys.
  (The amplitude changes by 0.1 dB each time the key is pressed). The range is shown in the display with the numbers 0...49.
- The value is automatically stored in the EE-PROM each time the button is pressed.

After leaving the step with SELECT, the last value remains stored in the EE-PROM.

7. Audio Linear playback level adjustment TDA9604H - AMB (AF)

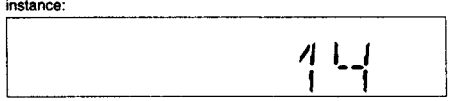
(only for stereo sets and mono sets with front plugs)

Purpose: Adjustment of the amplification of the audio linear playback level TDA9604H [7850].
Symptom if incorrectly set:
The linear playback sound is too low or too loud.

- Enter the service test program and, whilst step display is flashing, enter the step number 62, using the numerical keys.

TP	ADJ.	MODE	INPUT
Pin 1 of Scart 1 (Audout)	refer to description	SP Self-recording and Playback, Service mode call up Step 62	(Video white picture) Audio in Scart 1, 700mV$_{RMS}$, 1kHz
TAPE		MEAS. EQ.	SPEC.
Blank Tape		AC Millivoltmeter, Video Pattern, Frequency Generator	500mV$_{RMS}$ ±50mV

By pressing the SELECT button whilst **step 62** is flashing, the output select is switched to Mono and the display shows, for instance:



- Make a recording of the audio signal on E1.
- Connect the millivoltmeter to Scart1 Pin1(Audio out) and play the recording back.
- The level on Scart 1, Pin1 (Audio out) can be adjusted to the set value by pressing the UP (value increases) or DOWN keys (value decreases).
  (The amplitude changes by 1 dB each time the key is pressed).
  The range is shown in the display by the numbers 0...15.
- The value is automatically stored in the EE-PROM each time the button is pressed.

8. Display Control - AMB (DE, DC)

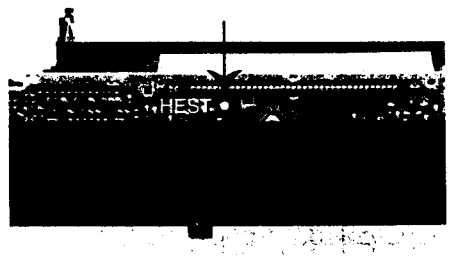
Service tasks after replacement of the clock quartz [1297] or the EEPROM:

8.1 Clock frequency output

Purpose: Setting the exact clock function.

Symptom, if incorrectly set:
The clock is too fast or too slow.

Enter the service test program and, whilst step display is flashing, enter the **step number 99**, using the numerical keys.
After entering with SELECT, the display is switched off and no further function can be carried out. At the HEST measuring point [7201 pin 80], the uncorrected clock frequency of approx. 2048 Hz is always output.



Measure the output frequency with the calibrated counter (minimum resolution of 6 digits) and note down the value (f_{meas}).

TP	ADJ.	MODE	INPUT
7201/80 (HEST)		Stop Service Mode call up Step 99	
TAPE		MEAS. EQ.	SPEC.
		Frequency counter with 6 digits	refer to description below

Determining the deviation (in ppm):

f_{meas}..... measured frequency
f_{nom}.....target frequency (2048,000 Hz)

Deviation = $1x10^6 x (f_{meas} - f_{nom}) / f_{nom}$

Determining the correction value for Step 53:

Correction value = Deviation / 0.763 + 128 (round off to whole number)

The calculated **correction value** must be between 0 and 255 (change quartz otherwise), and must be entered in Step 53 and saved.
This Step can only be left by performing a **mains reset**, after which the service program must be entered again before Step 53 can be called up.

Example:

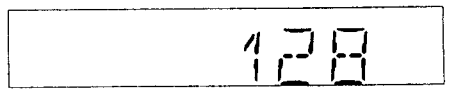
f_{meas}=2047.97Hz f_{nom}=2048.00Hz

Deviation = $1x10^6$ x (2047.97 - 2048) / 2048 = **-14.648**
Correction value = -14.648 / 0.763 + 128 = 108.80 = **109**

8.2 Inputting the clock correction

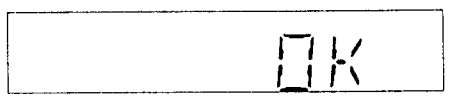
Before carrying out step 53, the correction value must be established in step 99.

By pressing the SELECT key whilst **step 53** is flashing, the display shows, for instance (128 is default value from a empty EEPROM):



Using the numerical keys of the remote control, the established correction value from **Step 99** is entered as a 3-digit number (value must be between 0 and 255).

After pressing the OK key on the remote control, the entered code is stored, the display shows OK for approx. 3 seconds and then the stored value in decimal format.



In case of an invalid entry (value >255), the activation of the OK key causes the content of the last stored value to be displayed and OK does not appear in the display.
To leave the step press Select.

List of abbreviations

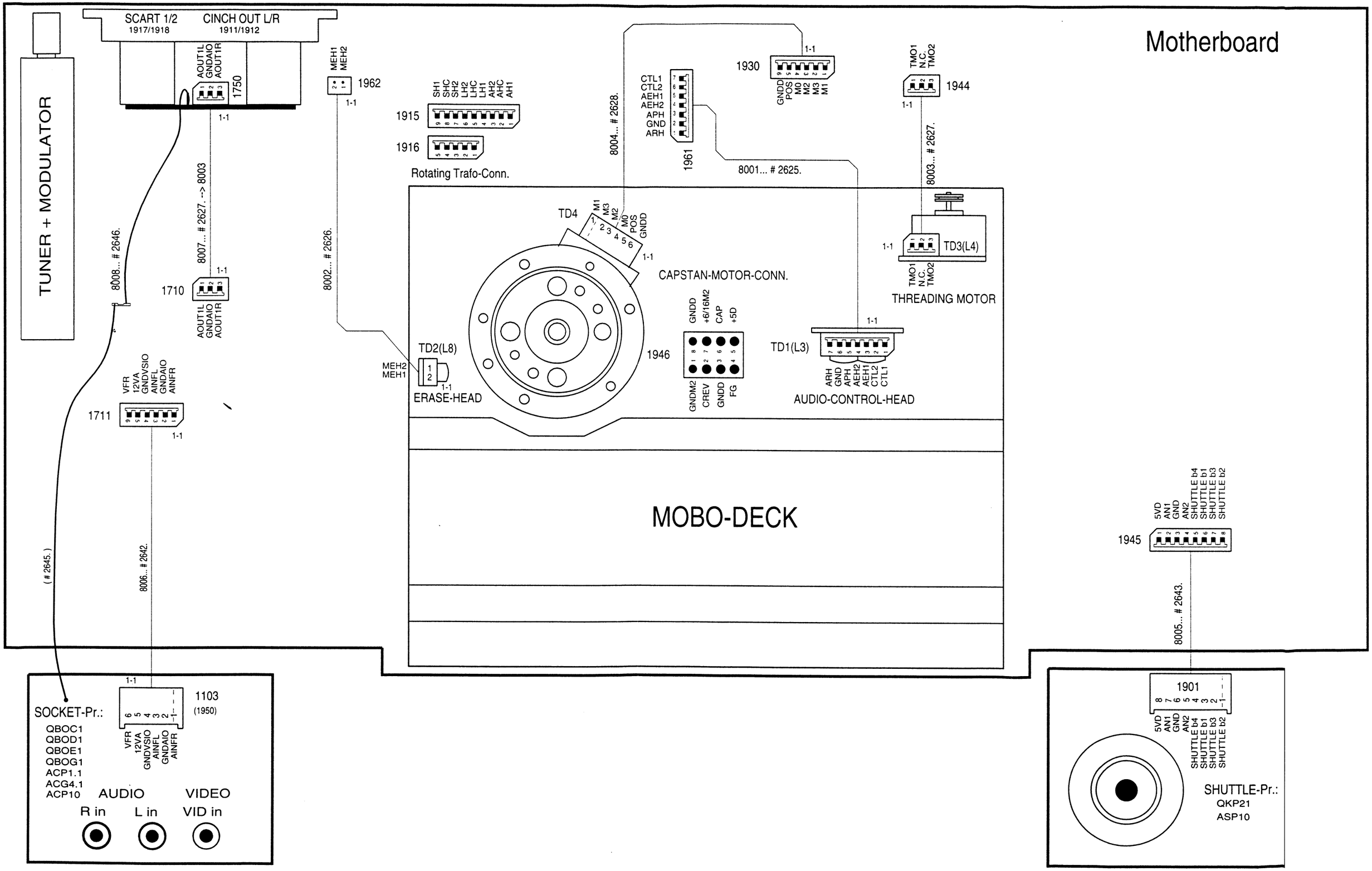
Signal	Description	Application											
+5AS	+5V analog after fuse 1700												QNIC
+5ASS	+5V digital, after coil 5706												QNIC
+5D	+5V digital			DE									QNIC
-28V	-28V display supply	PS			DC			IO					
-7V	-7V I/O-switches supply							IO					
12SW	+12V analog (< 6W switched)	PS					AL			FV			QNIC
12VA	+12V analog	PS						IO		FV	AF		
14VM1	+14V for threading- and headmotor	PS		DE									
2FSC	2x Colour subcarrier					VS						OS	
33V	+33V for tuner tuning voltage	PS								FV			
5VA	+5V analog	PS						IO		FV	AF	OS	
5VASW	+5V analog (< 6W switched)	PS	HA	DE		VS			SE	FV		OS	QNIC
5VASW2	+5V analog after coil 5802											OS	
5VASWB	+5V analog after coil 5726									FV			
5VD	+5V digital	PS		DE	DC					FV			
5VD1	+5V digital, after coil 5200				DC								
5VD2	+5V digital, after coil 5400			DE									
8SC1	Scart 1 pin 8 output			DE				IO					
8SC2	Scart 2 pin 8 input			DE				IO					
9/14VM2	Capstan motor supply, switched	PS		DE									
AEH1/2	Audio erase head						AL						
AF1	Audio from frontend, left						AL	IO		FV	AF		
AF2	Audio from frontend, right									FV	AF		
AFC	Automatic frequency control				DC					FV			
AFE	Audio from frontend									FV			QNIC
AGC	Automatic gain control			DE						FV			
AH1/2/C	Audio heads		HA										
AIN1	Audio input scart 1						AL	IO					
AIN1L	Audio input scart 1, left							IO			AF		
AIN1R	Audio input scart 1, right							IO			AF		
AIN2	Audio input scart 2						AL	IO					
AIN2L	Audio input scart 2, left							IO			AF		
AIN2R	Audio input scart 2, right							IO			AF		
AINFL	Audio left from Front connector							IO			AF		
AINFR	Audio right from front connector							IO			AF		
AMCO	Audio to the modulator									FV	AF		
AMLP	Audio mono playback						AL	IO		FV	AF		
AMLR	Audio mono record						AL	IO			AF		
AN1/2	Analog voltage from keyboard matrix				DC					FV			QNIC
ANIL	NICAM Audio, left									FV			QNIC
ANIR	NICAM Audio, right							IO			AF		
AOUT1L	Audio output from scart 1, left							IO			AF		
AOUT1R	Audio output from scart 1, right							IO			AF		
AOUT2L	Audio output from scart 2, left							IO			AF		
AOUT2R	Audio output from scart 2, right							IO			AF		
APH	Audio playback head						AL						
ARH	Audio record head						AL						
BLANKING	Blanking pulse RGB loopthrough							IO					
BLUE	Blue signal between scart 1/2							IO					
CAP	Capstan control voltage			DE									
CKDET	Colour system information			DE		VS							
CLKD1	Serial bus clock			DE	DC								
CREV	Capstan reverse			DE									
CROT	Colour rotation on/off			DE		VS							

Signal	Description	Application											
CSCP	Colour phase switching for LP feature mode			DE		VS							
CSI	Colour system information			DE					SE				
CSP	Chrominance secam playback					VS			SE				
CSR	Chrominance secam record		HA						SE				
CSW	8V/14V switching for capstan motor	PS		DE									
CSYNC/1/2	Composite sync pulse		HA	DE		VS			SE			OS	
CTL1/2	Control track signal			DE			AL						
DATD1/2	Serial bus data			DE	DC								
DEC	Audio switching voltage							IO					
ENVC	Envelope comparator signal		HA	DE									
FFP	Feature frame pulse			DE		VS							
FG	Capstan tacho pulse			DE									
FGD	Capstan tacho pulse digital			DE									
FMAP	FM audio playback		HA								AF		
FMAR	FM audio record		HA								AF		
FMPV	FM video playback		HA			VS			SE				
FMRV	FM video record		HA			VS							
FOME	Follow Me (video signals equal)			DE								OS	
FTA	Threading tacho			DE									
FTAD	Threading tacho digital			DE									
GNDA	Ground analog							IO		FV			QNIC
GNDA1/A2	Ground analog QNIC												QNIC
GNDAF	Ground analog AF										AF		
GNDAIO	Ground analog IO							IO					
GNDAL	Ground analog AL						AL						
GNDD	Ground digital			DE				IO			AF		QNIC
GNDEO	Ground erase oscillator						AL						
GNDM	Ground capstan motor			DE									
GNDVS	Ground signal electronics										AF		
GNDVSIO	Ground analog VS, IO							IO					
GREEN	Green signal between scart1/2							IO					
HEHI	Heater for displaytube high	PS			DC								
HELO	Heater for displaytube low	PS			DC								
HEST	Heater voltage control signal				DC								
HP2	Head pulse audio		HA	DE							AF		
I/R	Deck switch / Record protection			DE									
ILED	LED-tower supply			DE									
INIT	Deck switch			DE									
IPOR	Inverse power on reset			DE	DC								
IRAF	Inverse record FM-audio		HA	DE									
IREV	Dubbing oscillator on/off			DE		VS	AL						
ISTBY	Inverse stand by	PS			DC								
ISWS	Video-FM mute			DE		VS							
IWIND	Control pulse amplification low			DE									
LH1/2/C	Long play heads		HA										
MEH1/2	Main erase head						AL						
MON	Monitor loop through scart 1/2							IO					
MOT0-3	Head motor Control lines			DE									
MTA	Audio mute			DE			AL						
NC	Not connected			DE									
OCLK	OSD-bus clock				DC							OS	
OCS	OSD chip select				DC							OS	
ODAT	OSD-bus data				DC							OS	
OFP	Frame pulse			DE								OS	

Signal	Description	Application											
PBV	Playback			DE				SE					
PG/FG	Head wheel position/-speed			DE									
POS	Position pulse headwheel			DE									
PSS	PAL or secam-L				DC				FV				
RECP	Record protection			DE									
RED	Red signal between scart 1/2							IO					
REEL	Head wheel control			DE									
SB1	Secam band 1				DC				FV				
SCL	IIC bus clock							IO		FV	AF	OS	QNIC
SCL2	Serial bus clock			DE		VS							
SDA	IIC bus data							IO		FV	AF	OS	QNIC
SDA2	Serial bus data			DE		VS							
SFS	Sound filter switch				DC				FV				
SH1/2/C	Standard play heads		HA										
SSIF	Second sound interfrequency								FV				QNIC
SWIN	Head switching pulse		HA	DE									
SYNC	Control track pulse			DE									
TAE	Tape end detection			DE									
TAS	Tape start detection			DE									
THIO	Threading motor in/out			DE									
TMO	Threading motor on/off			DE									
TMO1/2	Threading motor connection			DE									
TRIA/ALI	Tracking information audio / Audio level indication			DE							AF		
TRIV	Tracking information video		HA	DE									
VBS	Video input					VS		IO				OS	
VFR	Video from front connector							IO					
VFV	Video from frontend					VS		IO		FV		OS	
VIN1	Video input scart 1							IO					
VIN2	Video input scart 2							IO					
VISS	Control sync pulse inversion			DE									
VMOD	Video to the modulator							IO		FV			
VOUT	Video from OSD part							IO				OS	
VREC	Video record from I/O					VS			SE			OS	
VREF	Reference voltage								SE				
VSB	Video from signal electronics					VS						OS	
W/R	Control track write/read			DE									
WTL	Wind tacho left			DE									
WTLD	Wind tacho left digital			DE									
WTR	Wind tacho right			DE									
WTRD	Wind tacho right digital			DE									

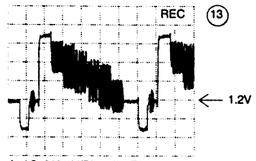
PS ..... Power Supply ..... page 3-8
HA ..... Head Amplifier ..... page 3-9
DE ..... Deck Electronics ..... page 3-10
DC ..... Display Control ..... page 3-11
VS ..... Video Signal Processing ..... page 3-12
AL ..... Audio Linear ..... page 3-12
IO ..... In/Out ..... page 3-13
SE ..... Secam Processing ..... page 3-14
FV ..... Frontend ..... page 3-15
AF ..... Audio Processing ..... page 3-16
OS ..... On Screen Display ..... page 3-17
QNIC ... Nicam Board ..... page 3-18

Wiring Diagram

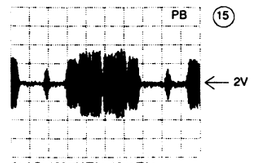


Block Diagram Video

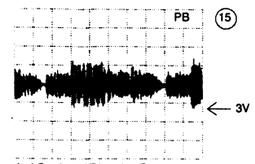
3-2



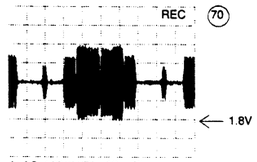
A: AC, 200mV/Div, 10us/Div
IC 7540 Pin 13



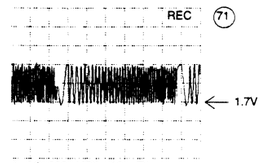
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (PAL)



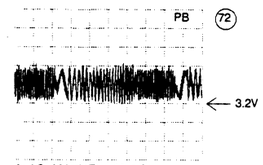
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (SECAM L)



A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 14



A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 18



A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 15

Interconnec

AF page 3-1
I/O page 3-1

RECORD
PLAYBACK
RECORD & PLAYBACK

* OPTION

CINCH FRONT

INPUT/OUTPUT (IO)

SCART2 1918 *
SCART1 1917

DECK ELECTRONICS (DE)
DECK CONTROLLER
7400

CHROMA PROCESSING SECAM L (VS-S)
7110
TDA4722

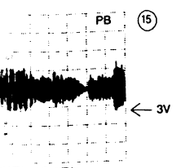
FRONT END VIDEO (FV)
TUNER/MODULATOR
1701

OSD PART
OSD
7800

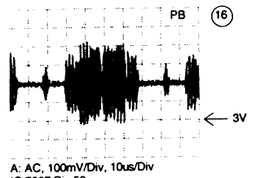
7007
for A10-LA71525M
for A11-LA71527M

7201 DISPLAY CONTROL (DC)

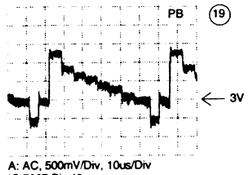
VIDEO SIGNAL PROCESSING (VS)



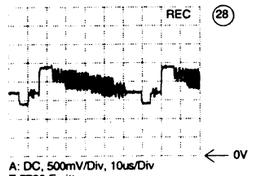
V/Div, 10us/Div
46 (SECAM L)



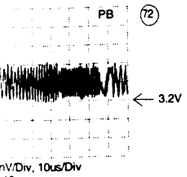
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 52



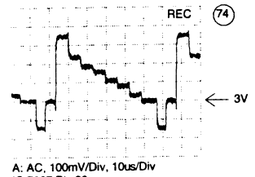
A: AC, 500mV/Div, 10us/Div
IC 7007 Pin 40



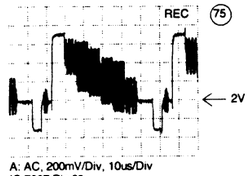
A: DC, 500mV/Div, 10us/Div
T 7730 Emitter



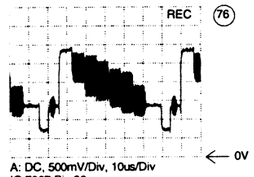
V/Div, 10us/Div
15



A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 26



A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 28



A: DC, 500mV/Div, 10us/Div
IC 7007 Pin 38

Interconnections:

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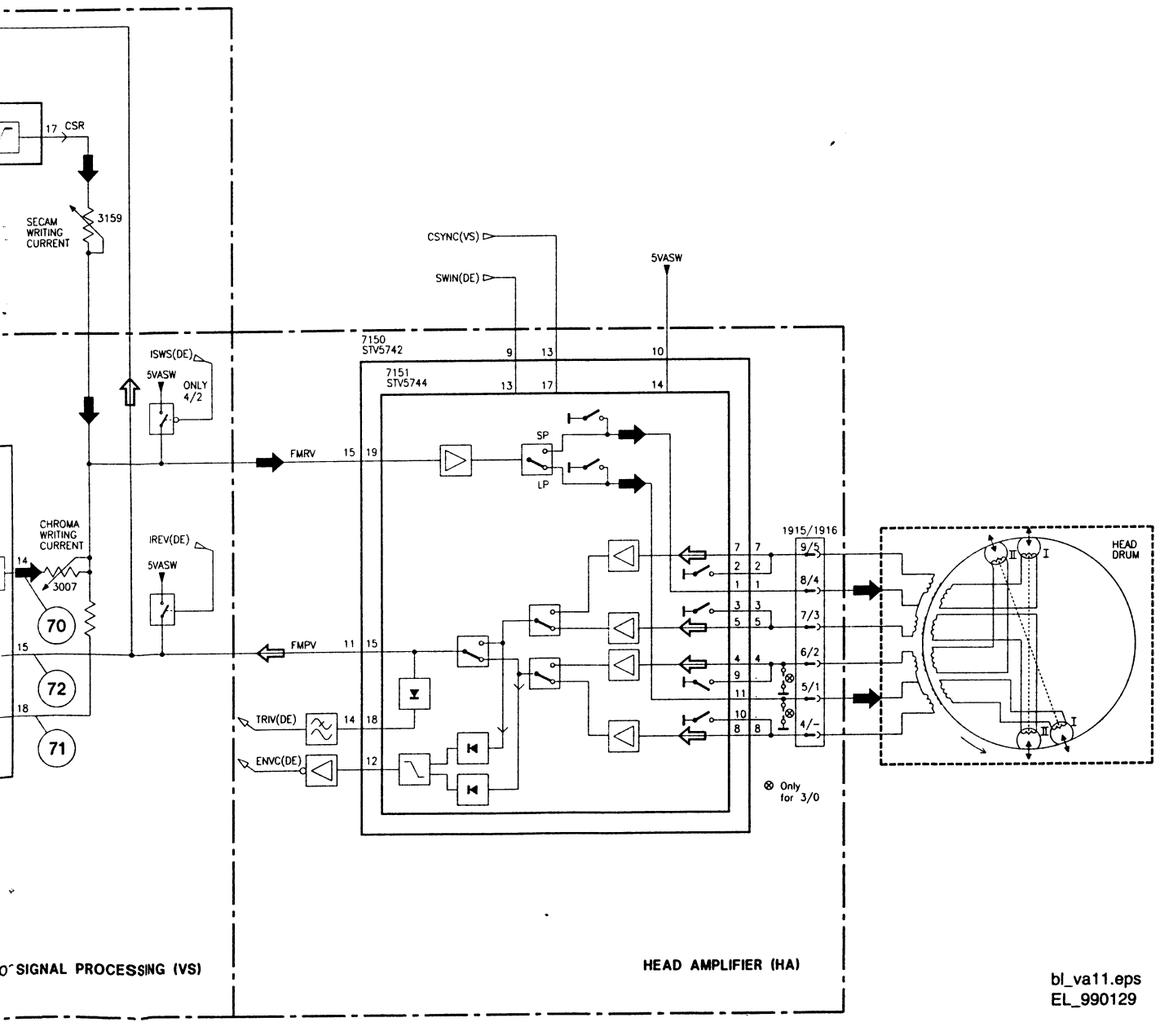
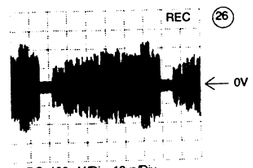
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

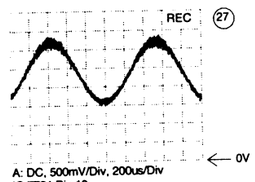


bl_va11.eps
EL_990129

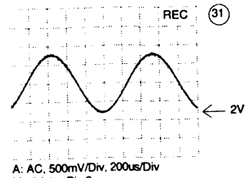
Block Diagram Audio Mono



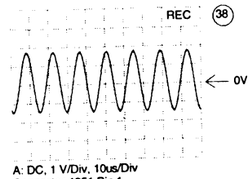
A: DC, 100mV/Div, 10us/Div
Tuner Pin 17



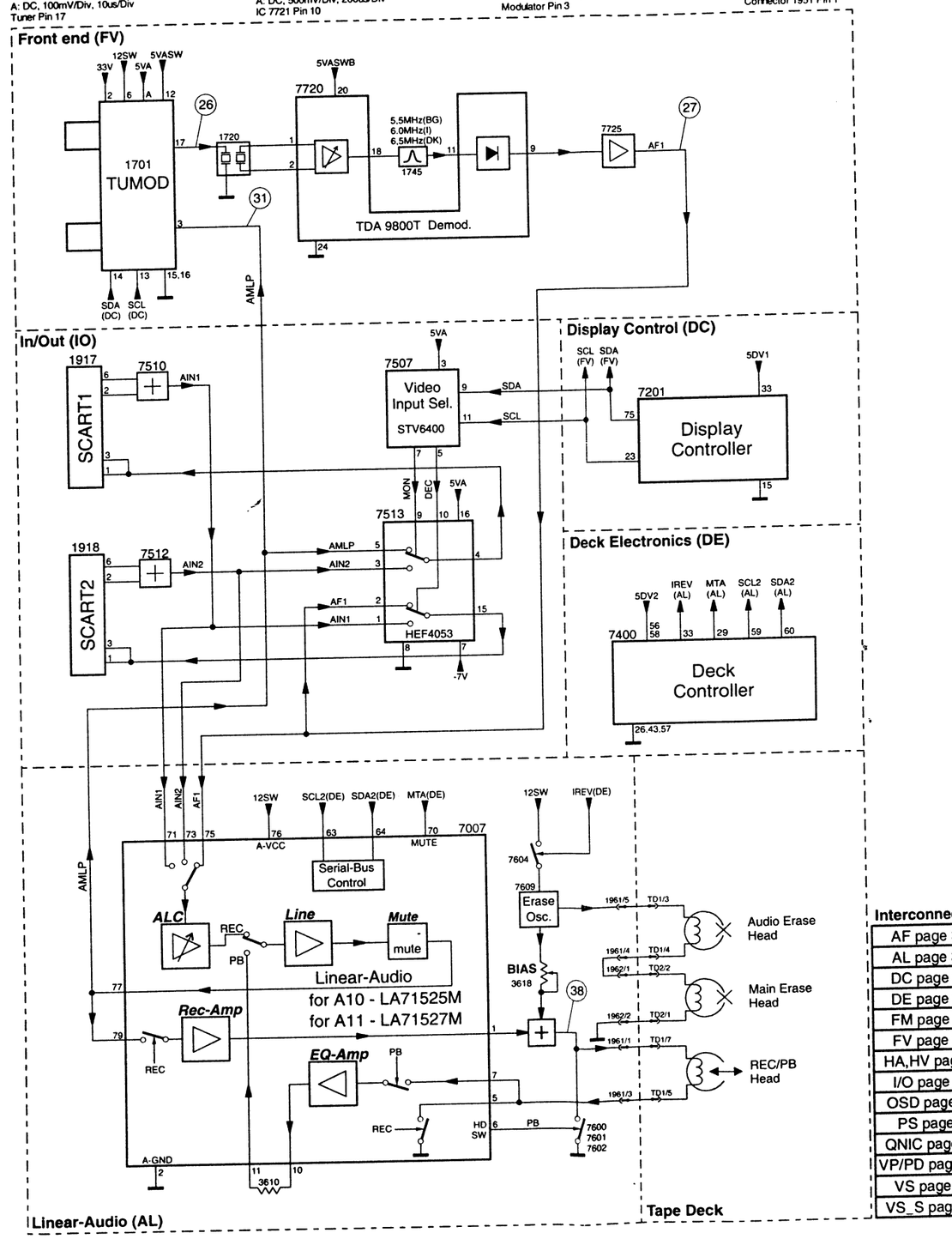
A: DC, 500mV/Div, 200us/Div
IC 7721 Pin 10



A: AC, 500mV/Div, 200us/Div
Modulator Pin 3



A: DC, 1 V/Div, 10us/Div
Connector 1951 Pin 1



Interconnections:

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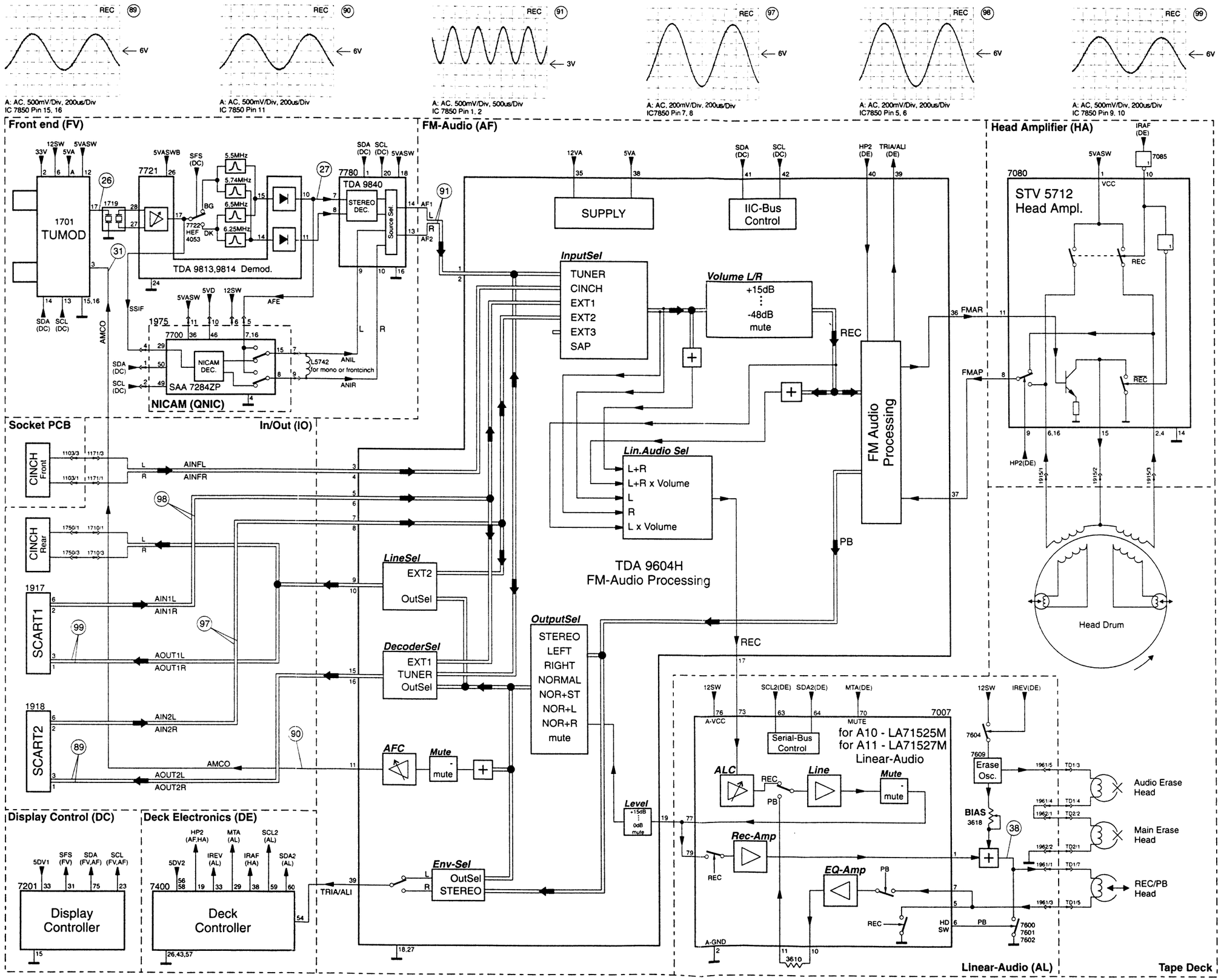
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14

3-3

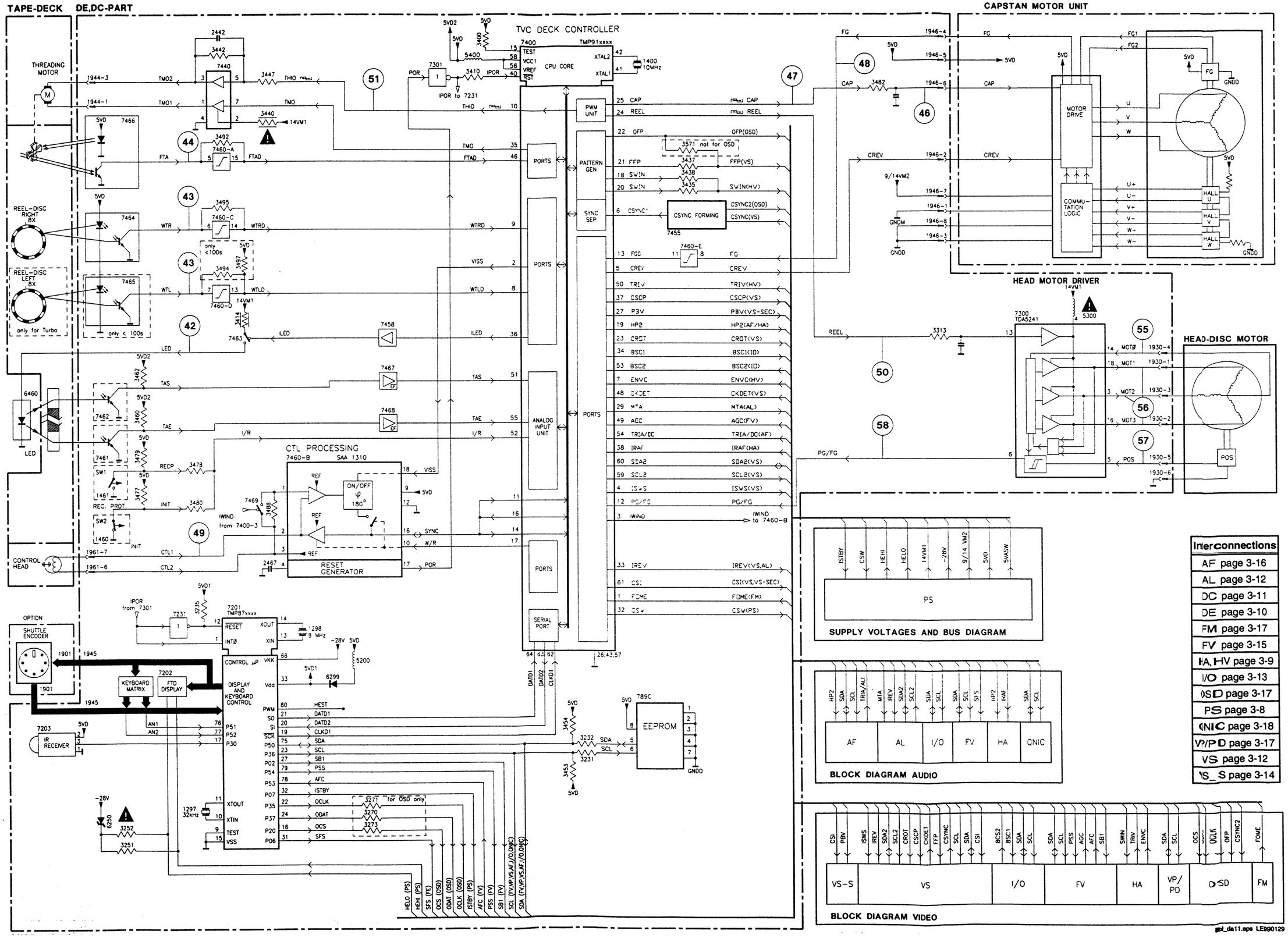
Block Diagram Audio Stereo

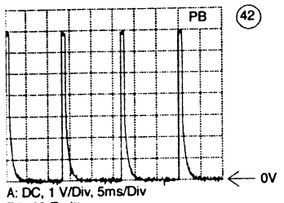


Interconnections:

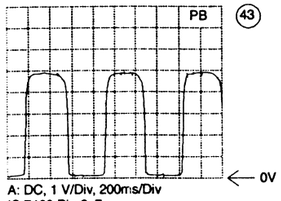
AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14

Block Diagram Digital

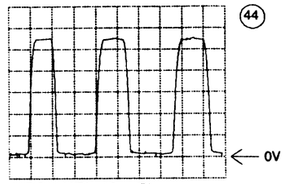




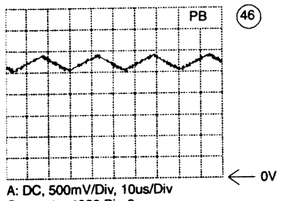
A: DC, 1 V/Div, 5ms/Div
T 7463 Emitter



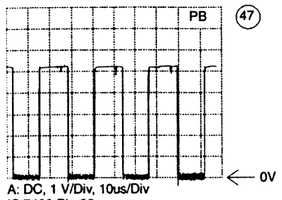
A: DC, 1 V/Div, 200ms/Div
IC 7460 Pin 6, 7



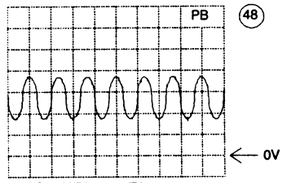
A: DC, 1 V/Div, 10ms/Div
7466



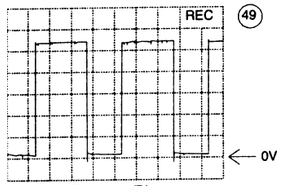
A: DC, 500mV/Div, 10us/Div
Connector 1930 Pin 6



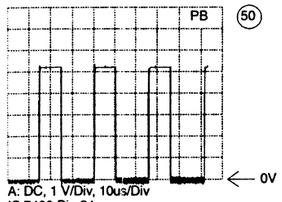
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 25



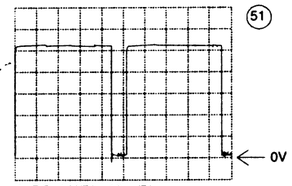
A: DC, 1 V/Div, 1ms/Div
Connector 1946 Pin 4



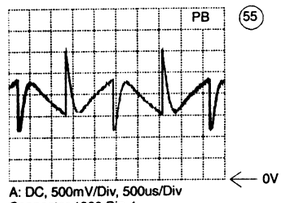
A: DC, 1 V/Div, 10ms/Div
IC 7460 Pin 2



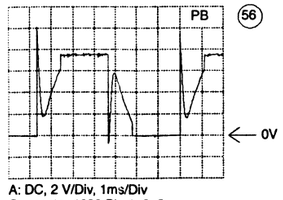
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 24



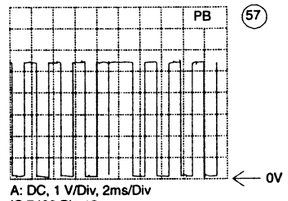
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 10



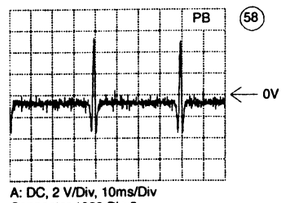
A: DC, 500mV/Div, 500us/Div
Connector 1930 Pin 4



A: DC, 2 V/Div, 1ms/Div
Connector 1930 Pin 1, 2, 3

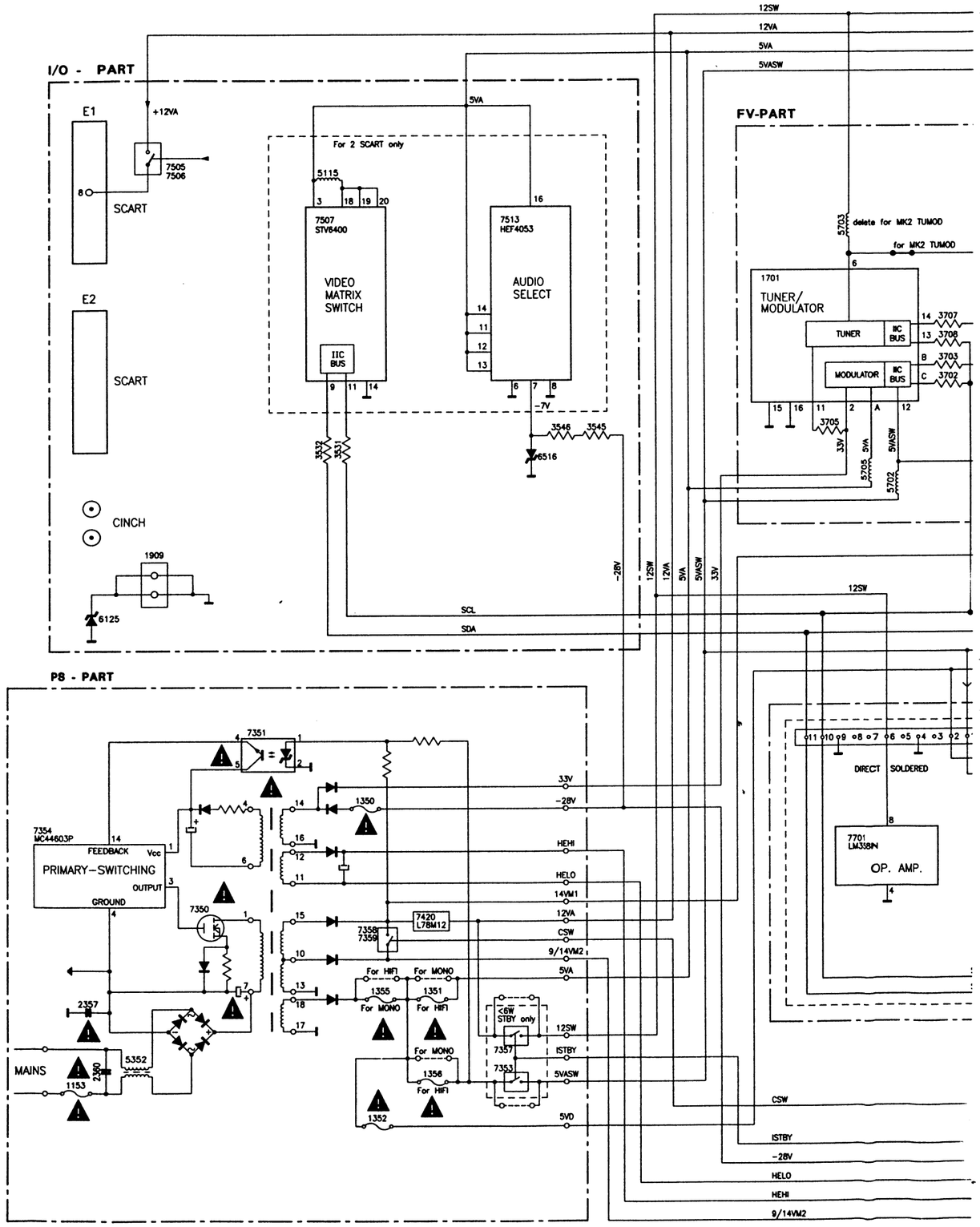


A: DC, 1 V/Div, 2ms/Div
IC 7400 Pin 12



A: DC, 2 V/Div, 10ms/Div
Connector 1930 Pin 5

Supply Voltages and Bus Diagram



Interconnections:

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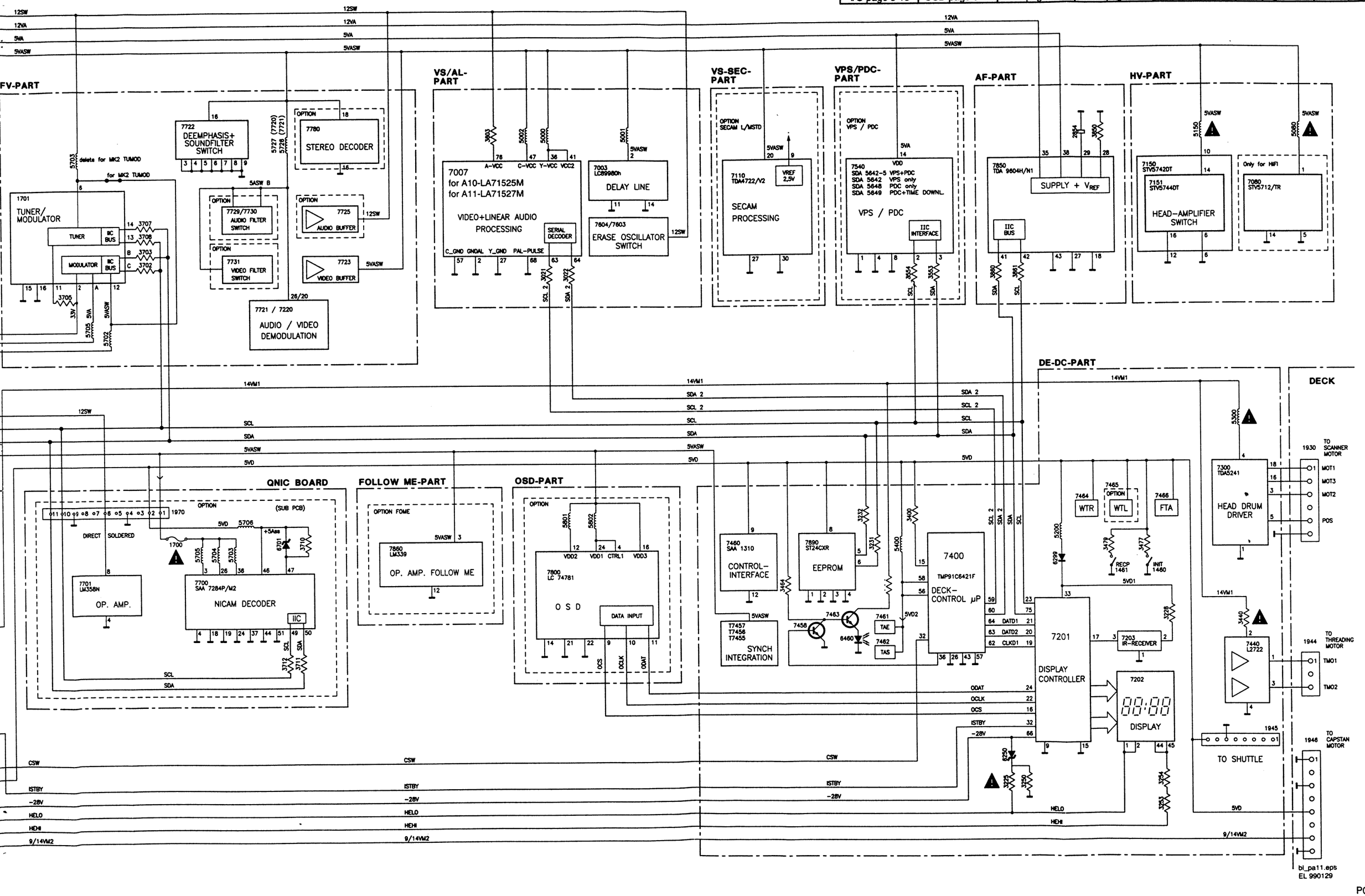
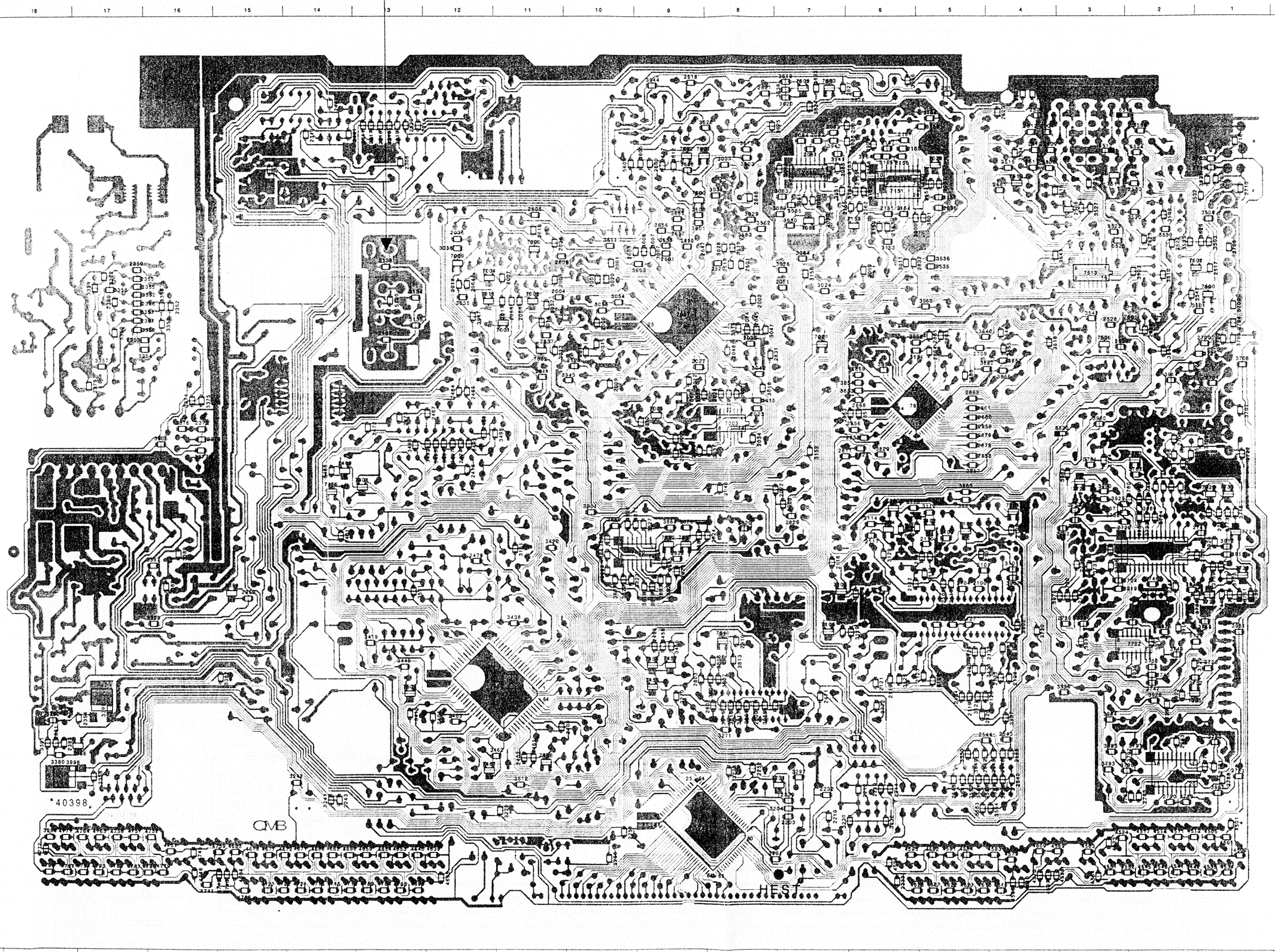


3-6

Mother Board AMB - solder side

Layout for cinch print rear



2001	C	10	2317	A	13	2785	K	2
2002	D	8	2319	A	13	2788	K	1
2003	D	10	2320	A	13	2789	K	2
2004	D	11	2350	C	17	2790	K	2
2006	D	10	2352	D	16	2793	H	2
2007	D	11	2353	D	17	2794	D	1
2008	D	11	2354	J	17	2795	F	2
2009	E	10	2355	D	17	2800	J	8
2011	E	11	2358	K	17	2801	J	8
2013	D	11	2359	H	15	2802	J	8
2015	E	10	2369	H	16	2803	I	9
2016	E	10	2372	F	16	2810	I	8
2018	D	12	2379	E	17	2811	F	7
2022	G	8	2380	D	17	2829	G	7
2023	E	8	2381	D	17	2831	E	8
2024	D	8	2383	J	18	2832	C	6
2026	C	11	2386	D	17	2851	F	6
2027	E	9	2400	J	11	2853	F	6
2028	E	8	2402	J	11	2855	F	6
2029	E	8	2403	J	12	2856	F	6
2030	F	9	2404	J	12	2857	F	5
2031	F	8	2416	F	12	2858	F	5
2033	E	9	2441	B	14	2859	F	5
2034	F	8	2442	A	14	2860	F	5
2035	E	8	2455	I	9	2861	E	5
2036	C	12	2461	G	14	2862	E	5
2037	D	11	2464	E	12	2863	D	5
2038	C	5	2465	E	12	2864	E	5
2040	E	8	2467	F	12	2865	D	5
2042	E	8	2468	F	12	2868	E	6
2045	D	8	2470	H	12	2869	E	6
2046	G	8	2471	J	7	2878	F	5
2047	F	9	2472	F	13	2879	F	5
2048	E	8	2473	F	13	2882	H	9
2051	D	7	2474	F	12	2883	H	9
2055	D	11	2501	C	8	2884	H	10
2064	D	12	2504	B	4	2885	H	10
2066	D	11	2505	A	4	2889	G	10
2080	C	7	2506	A	4	3000	C	6
2081	B	7	2507	A	4	3001	C	5
2082	B	7	2508	C	3	3009	C	6
2083	B	7	2509	B	4	3010	F	9
2084	B	7	2510	B	4	3011	C	6
2085	B	7	2511	B	4	3012	E	9
2087	A	6	2512	B	4	3013	E	11
2100	H	5	2515	A	5	3014	D	11
2101	H	5	2517	C	1	3015	E	8
2102	H	5	2519	C	8	3016	E	8
2103	G	5	2520	C	8	3019	D	8
2104	H	5	2521	E	10	3020	D	10
2105	H	5	2523	E	3	3024	D	7
2106	G	4	2524	C	2	3026	C	7
2107	H	5	2525	C	2	3026	C	8
2108	G	6	2526	D	2	3029	C	8
2109	H	5	2527	C	2	3032	D	11
2110	G	5	2528	D	3	3033	B	8
2111	H	5	2530	B	2	3034	E	8
2112	H	6	2540	K	4	3035	D	12
2113	H	6	2541	K	5	3036	C	12
2115	G	6	2542	J	5	3047	D	8
2116	H	7	2543	J	4	3051	B	5
2117	G	6	2544	J	5	3054	D	10
2118	H	5	2545	K	5	3055	D	10
2119	I	6	2546	J	4	3080	C	7
2121	I	6	2600	B	9	3081	C	7
2122	I	5	2601	C	9	3082	B	7
2123	I	5	2603	C	9	3083	B	7
2124	I	5	2605	C	11	3084	C	7
2125	J	5	2606	C	11	3085	C	7
2126	J	5	2607	B	9	3086	B	6
2128	I	4	2608	C	9	3089	C	7
2129	J	5	2618	A	9	3101	H	4
2130	I	5	2621	A	8	3112	G	5
2132	I	5	2646	B	8	3113	G	6
2133	I	5	2647	C	8	3114	G	6
2134	J	5	2650	C	9	3116	I	7
2135	I	4	2656	C	9	3119	I	6
2137	D	13	2657	C	9	3121	J	5
2138	C	13	2700	E	1	3122	I	4
2150	C	6	2701	E	1	3125	I	6
2151	C	6	2702	D	1	3126	I	5
2153	B	5	2705	C	1	3127	I	5
2154	A	5	2706	F	2	3128	I	5
2155	C	6	2707	F	2	3129	H	6
2156	B	6	2709	E	5	3134	D	13
2157	B	6	2710	B	1	3135	D	13
2158	B	6	2715	B	1	3151	G	11
2159	B	6	2716	B	1	3152	F	7
2160	B	6	2722	F	1	3153	C	6
2161	B	6	2723	G	1	3154	C	6
2162	C	6	2726	G	3	3155	B	5
2163	C	6	2729	G	3	3156	A	5
2203	K	7	2730	I	3	3157	B	6
2204	K	7	2731	H	3	3158	D	7
2210	K	7	2732	H	3	3162	B	6
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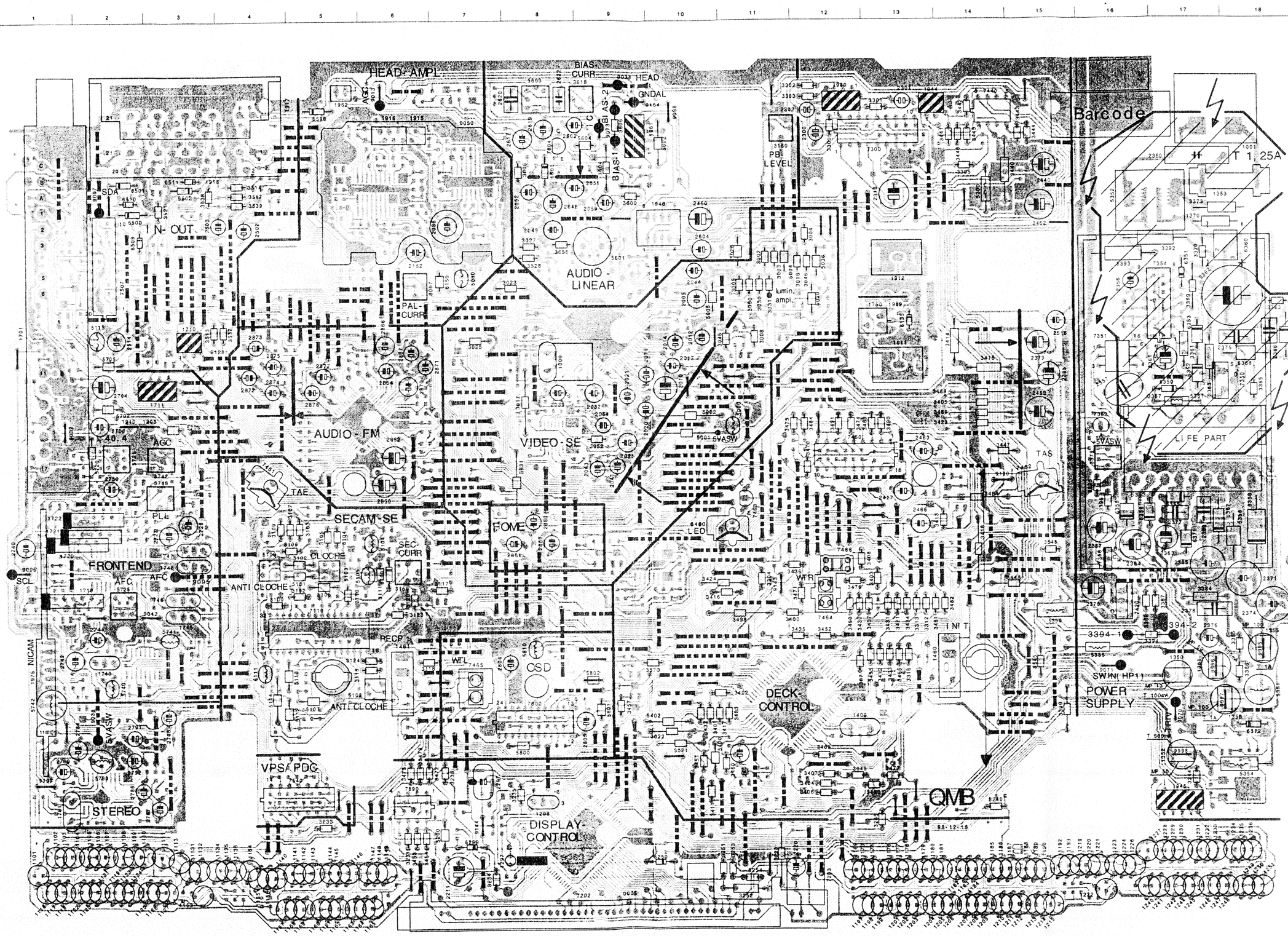
Mother Board AMB - component side



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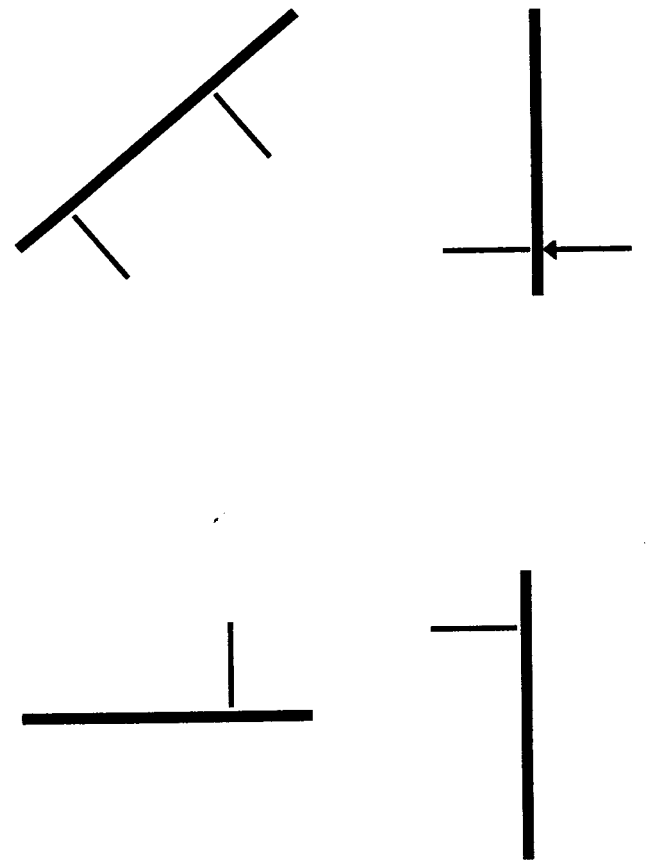
1170	L	12	2014	D	10	3030	D	11	3457	I	9	6358	G	16	9092	C	9
1171	L	13	2017	E	10	3031	D	11	3459	E	14	6359	G	18	9093	G	7
1176	L	13	2019	E	9	3045	D	11	3460	J	11	6360	C	18	9094	F	4
1177	L	13	2020	E	9	3046	C	12	3463	J	12	6371	G	17	9095	H	3
1178	L	13	2021	E	9	3048	J	12	3464	G	14	6372	J	18	9096	I	4
1179	L	13	2025	F	9	3050	D	11	3466	I	13	6460	G	11	9097	C	3
1180	L	13	2032	E	9	3052	F	9	3469	E	14	6500	C	2	9098	A	10
1181	L	14	2039	E	8	3087	I	12	3470	F	12	6501	B	2	9099	A	11
1182	L	14	2041	F	9	3100	H	4	3471	H	12	6502	B	3	9100	K	11
1183	L	14	2043	F	9	3102	H	5	3472	J	6	6509	C	2	9101	K	10
1184	L	14	2044	C	10	3103	G	5	3473	J	6	6510	B	2	9102	K	10
1185	L	14	2049	C	8	3104	G	5	3474	F	12	6511	B	3	9103	J	9
1186	L	14	2054	F	9	3105	G	5	3475	F	12	6516	A	5	9104	K	11
1187	L	14	2059	B	9	3106	G	5	3476	H	12	6601	B	8	9105	L	7
1188	L	15	2086	C	7	3107	G	4	3477	J	13	7110	H	5	9106	F	12
1189	L	15	2152	C	6	3109	G	4	3479	J	6	7202	L	9	9107	G	13
1190	L	15	2211	L	7	3110	H	5	3480	K	13	7203	L	12	9108	G	13
1192	L	15	2220	L	11	3111	H	6	3481	H	13	7300	A	13	9109	G	13
1193	L	15	2297	K	7	3115	I	6	3482	H	14	7350	E	18	9110	K	11
1197	L	12	2300	A	12	3117	H	7	3483	J	11	7351	E	16	9111	K	10
1198	L	13	2301	A	13	3118	I	6	3484	F	12	7352	F	16	9112	H	8
1199	L	13	2302	A	12	3120	H	6	3489	F	13	7354	D	17	9113	C	12
1201	L	13	2318	B	13	3123	H	6	3490	F	13	7358	G	16	9114	I	10
1202	L	13	2356	D	16	3124	I	6	3491	F	12	7420	H	16	9115	C	14
1203	L	13	2357	E	17	3159	H	6	3499	H	11	7440	A	14	9116	G	14
1204	L	13	2360	B	17	3160	A	11	3513	D	3	7460	F	12	9117	B	13
1205	L	14	2361	E	17	3228	L	11	3514	B	4	7461	F	4	9118	G	11
1206	L	14	2362	D	18	3231	K	6	3517	B	4	7462	F	15	9119	F	14
1207	L	14	2363	G	17	3233	K	5	3521	B	3	7463	G	11	9120	G	13
1208	L	14	2364	G	16	3234	L	7	3528	C	6	7464	H	12	9121	G	13
1209	L	14	2365	H	17	3235	K	8	3537	D	4	7465	I	7	9122	H	13
1210	L	14	2366	D	18	3238	J	7	3538	B	3	7466	G	12	9123	G	13
1211	L	14	2367	G	16	3240	K	14	3539	B	4	7507	C	2	9124	J	8
1212	L	15	2368	G	17	3244	J	17	3545	I	15	7540	K	5	9125	I	7
1213	L	15	2370	H	16	3251	L	10	3546	G	15	7604	B	8	9126	E	3
1214	L	15	2371	H	18	3252	L	11	3570	I	10	7800	J	8	9127	J	9
1215	L	15	2373	D	15	3253	L	11	3600	B	9	7890	K	6	9128	E	4
1219	L	15	2374	H	18	3254	L	11	3604	B	9	9000	B	1	9129	E	11
1220	L	16	2375	D	18	3265	K	13	3606	A	9	9004	K	10	9130	F	14

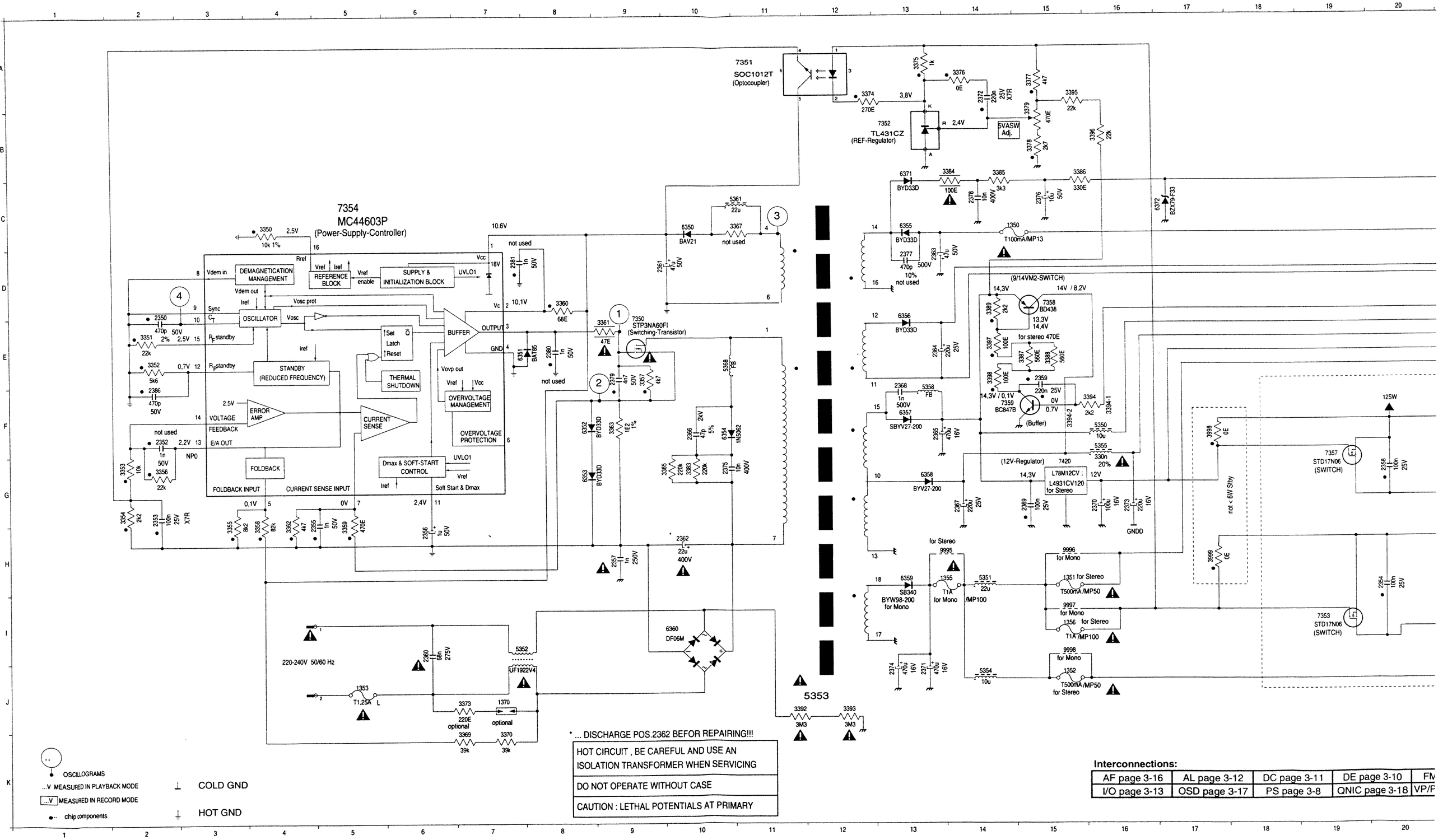
9131	L	6	9248 F 3
9132	I	12	9250 C 10
9133	K	7	9251 B 2
9134	J	12	9252 F 13
9135	H	15	9259 G 7
9137	D	12	9260 D 5
9138	C	15	9268 I 6
9139	B	14	9269 J 7
9140	B	13	9281 E 14
9141	G	12	9282 L 12
9142	G	12	9283 F 9
9143	H	11	9284 C 4
9144	K	7	9285 F 7
9145	I	4	9286 F 11
9146	F	7	9287 G 11
9147	D	10	9288 J 9
9148	F	7	9289 J 9
9149	E	7	9290 J 9
9150	A	5	9300 I 7
9151	H	7	9301 G 15
9152	E	3	9302 J 14
9153	E	8	9303 J 15
9154	A	9	9304 J 15
9155	E	8	9305 I 15
9156	D	7	9306 E 17
9157	G	7	9307 I 17
9158	G	14	9308 I 15
9159	F	11	9310 I 15
9160	K	11	9311 J 18
9161	F	12	9401 J 10
9162	E	4	9402 L 12
9163	I	10	9403 K 12
9164	G	12	9404 I 13
9165	G	7	9405 J 13
9166	E	11	9406 I 10
9167	H	12	9407 I 10
9168	E	7	9409 H 10
9169	D	7	9410 B 14
9170	I	8	9411 I 10
9171	C	9	9412 I 10
9172	E	3	9413 G 7
9173	G	15	9414 H 10
9174	H	8	9415 G 11
9175	H	8	9416 H 11
9176	F	6	9418 H 11
9177	J	7	9419 K 12
9178	J	1	9420 C 12
9179	D	6	9421 B 15
9180	B	5	9422 I 13
9182	B	5	9423 C 13
9183	D	4	9424 K 13
9184	D	3	9425 B 15
9185	C	2	9431 H 15
9186	D	5	9435 E 12
9187	I	7	9436 E 12
9188	F	12	9437 E 12
9189	G	11	9438 E 12
9190	G	12	9439 F 14
9191	J	7	9440 G 15
9192	D	5	9441 G 14
9193	E	7	9444 H 17
9194	D	7	9501 C 8
9195	L	11	9502 G 8
9196	D	2	9503 G 10
9197	K	1	9504 F 8
9198	E	1	9505 I 9
9199	B	11	9506 K 5
9200	B	2	9507 E 11
9201	F	3	9509 E 10
9202	D	3	9510 G 10
9203	D	3	9511 E 11
9204	B	5	9512 F 10
9205	E	10	9513 E 11
9206	E	7	9514 F 10
9207	D	6	9515 F 10
9208	D	6	9516 F 10
9209	G	7	9517 F 10
9210	E	7	9518 F 10
9211	D	6	9519 G 8
9212	A	6	9520 F 10
9213	I	10	9521 G 10
9214	G	12	9522 G 10
9215	F	13	9530 L 6
9216	I	14	9801 I 9
9217	E	12	9950 J 3
9218	I	3	9951 J 3
9219	H	7	9952 J 3
9220	C	4	9953 J 3
9221	D	12	9954 K 3
9222	F	7	9955 K 3
9223	K	6	9956 K 3
9224	H	9	9957 K 3
9225	F	7	9995 I 18
9226	G	6	9996 I 17
9227	F	5	9997 I 17
9228	B	5	9998 J 17
9229	D	3	
9230	D	3	
9231	C	3	
9232	D	4	
9233	D	5	
9234	D	5	
9235	G	6	
9236	D	4	
9237	K	9	
9238	I	7	
9241	D	6	
9242	D	11	
9243	I	9	
9244	F	4	
9246	I	2	
9247	G	4	

Make sure that the components in these areas are aligned correctly !!! (Danger of collision with deck)



Power Supply (PS)

3-8



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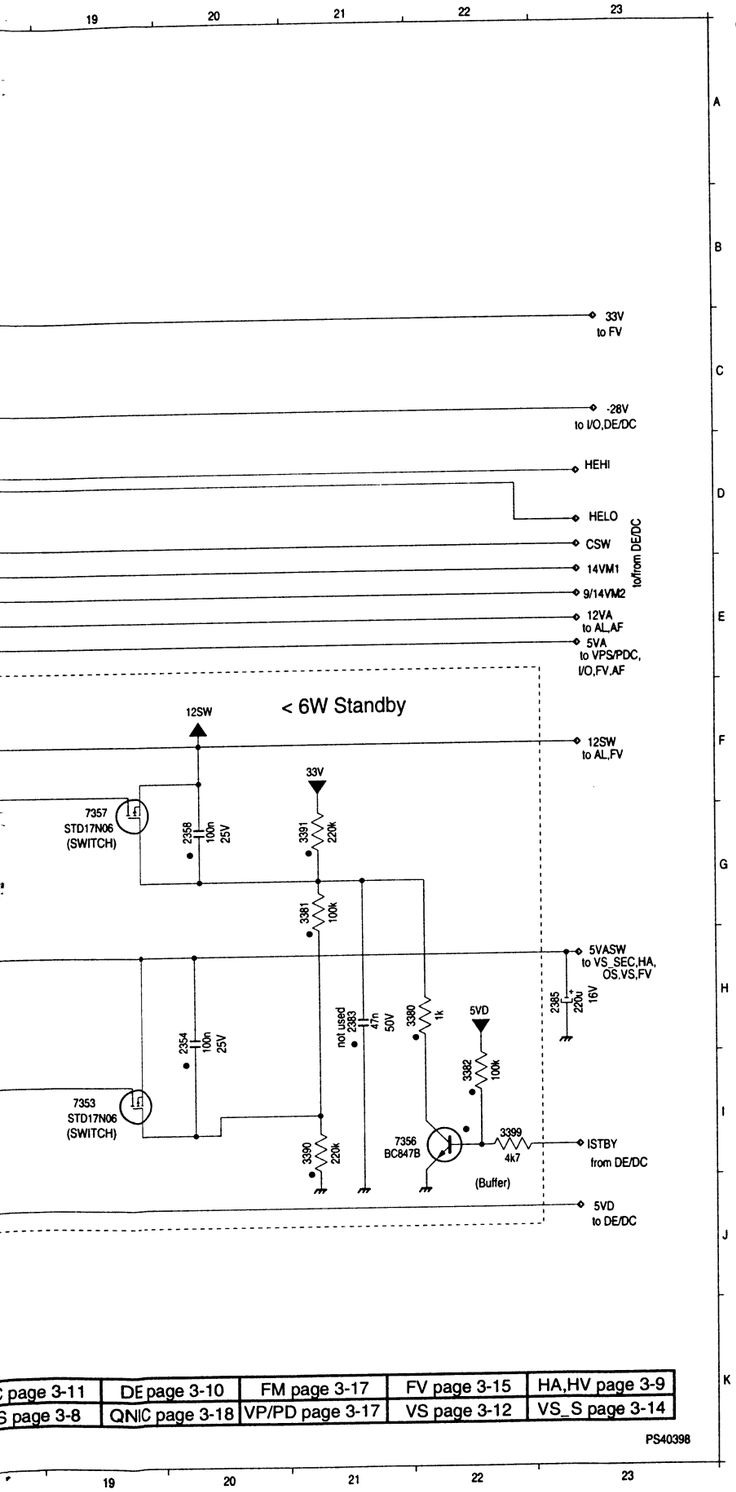
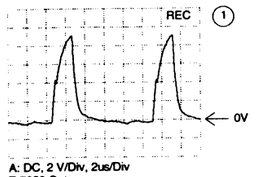
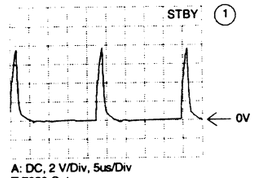


C page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
S page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

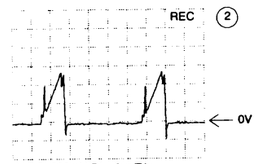
A	0075 I 1	7357 F19
	1350 C14	7358 D15
	1351 H15	7359 F14
	1352 J15	7420 G15
	1353 J 5	9995 H13
	1355 H13	9996 H15
	1356 I15	9997 I15
	1370 J 7	9998 I15
	2350 D 2	
	2352 F 2	
	2353 G 2	
	2354 H20	
	2355 G 4	
	2356 H 6	
	2357 H 9	
	2358 G20	
	2359 E15	
	2360 I 6	
B	2361 D 9	
	2362 H10	
	2363 D13	
	2364 E13	
	2365 F13	
	2366 F10	
	2367 G14	
	2368 F13	
	2369 G15	
	2370 G16	
C	2371 J13	
	2372 A14	
	2373 G16	
	2374 J13	
	2375 G10	
	2376 C15	
	2377 D13	
	2378 C14	
	2379 E 9	
	2380 E 8	
D	2381 D 7	
	2383 H21	
	2385 H23	
	2386 F 2	
	3350 C 4	
	3351 E 2	
	3352 E 2	
	3353 G 2	
	3354 G 2	
	3355 G 3	
E	3356 G 2	
	3357 E 9	
	3358 G 4	
	3359 H 5	
	3360 D 8	
	3361 E 9	
	3362 G 4	
	3363 F 9	
	3365 G10	
	3367 C11	
F	3369 K 7	
	3370 K 7	
	3373 J 7	
	3374 A12	
	3375 A13	
	3376 A14	
	3377 A15	
	3378 B15	
	3379 B15	
G	3380 H22	
	3381 G21	
	3382 I22	
	3383 G10	
	3384 B14	
	3385 B14	
	3386 B15	
	3387 E15	
	3388 E15	
	3389 D14	
	3390 I21	
H	3391 G21	
	3392 J11	
	3393 J12	
	3394 F16	
	3395 A15	
	3396 B16	
	3397 E14	
	3398 E14	
	3399 I22	
	3998 F17	
I	3999 H17	
	5350 F16	
	5351 H14	
	5352 I 7	
	5353 J11	
	5354 J14	
	5355 F16	
	5358 F13	
	5361 C11	
	5368 E10	
J	6350 C10	
	6351 E 7	
	6352 F 8	
	6353 G 8	
	6354 F10	
	6355 C13	
	6356 E13	
	6357 F13	
	6358 G13	
	6359 H13	
	6360 I10	
	6371 B13	
K	6372 C16	
	7350 E 9	
	7351 A11	
	7352 B13	
	7353 I19	
	7354 C 5	
	7356 I22	



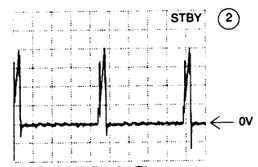
A: DC, 2 V/Div, 2us/Div
T 7350 Gate



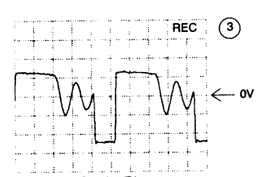
A: DC, 2 V/Div, 5us/Div
T 7350 Gate



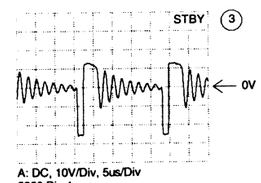
A: DC, 200mV/Div, 2us/Div
T 7350 Source



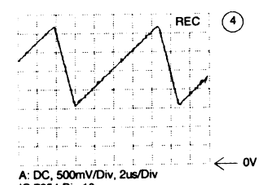
A: DC, 100mV/Div, 5us/Div
T 7350 Source



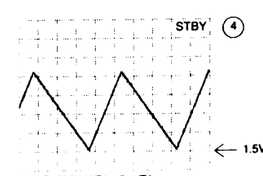
A: DC, 10 V/Div, 2us/Div
5353 Pin 4



A: DC, 10V/Div, 5us/Div
5353 Pin 4

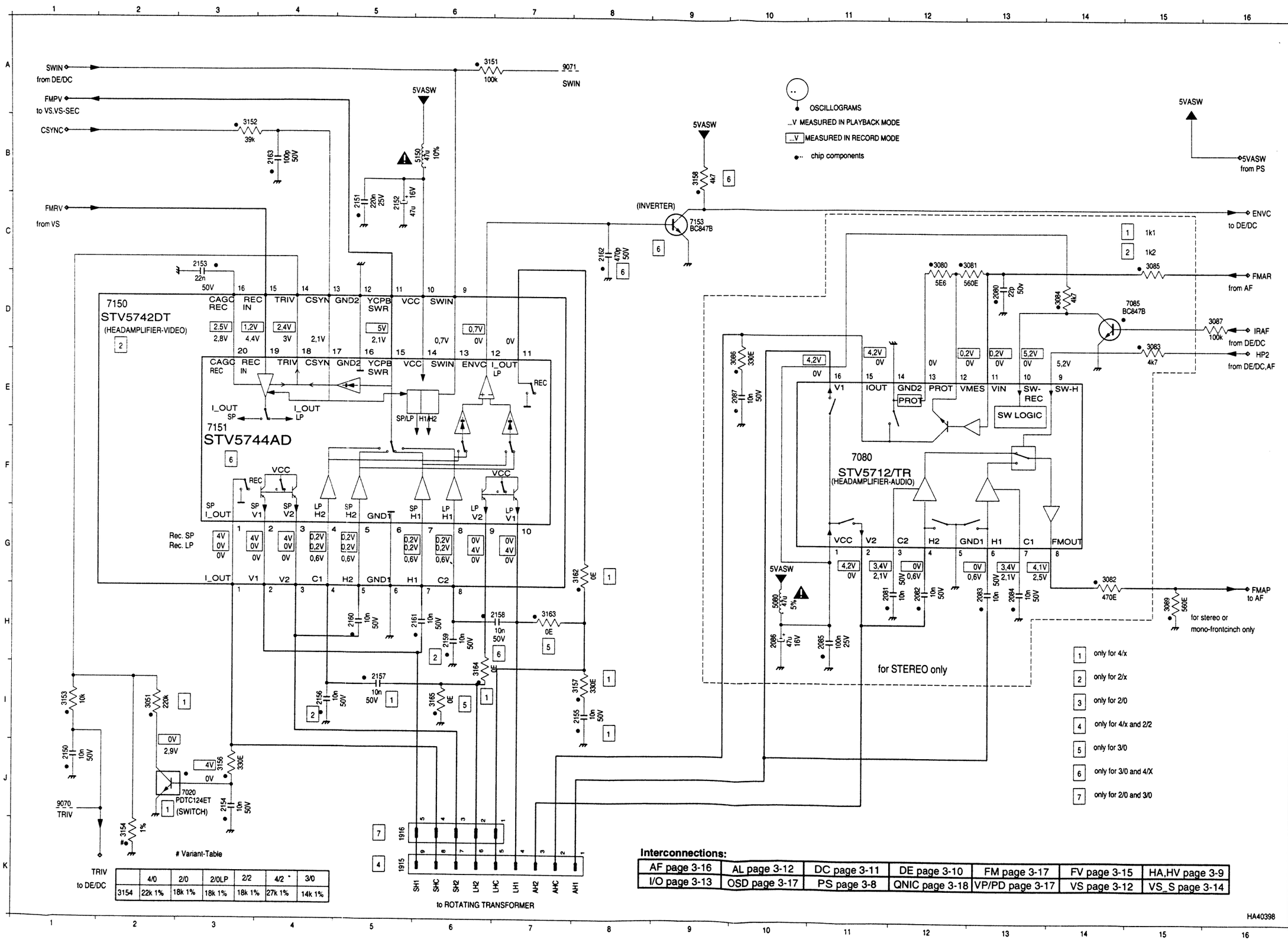


A: DC, 500mV/Div, 2us/Div
IC 7354 Pin 10



A: AC, 500mV/Div, 5us/Div
IC 7354 Pin 10

Head Amplifier (HA)



TRIV to DE/DC	4/0	2/0	2/0LP	2/2	4/2 *	3/0
3154	22k 1%	18k 1%	18k 1%	18k 1%	27k 1%	14k 1%

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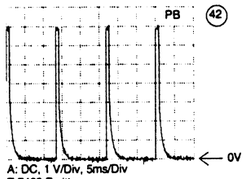
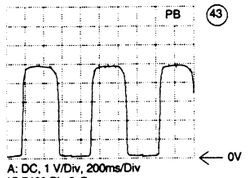
1915 K 5
1916 K 5
2080 D13
2081 H11
2082 H12
2083 H13
2084 H13
2085 H11
2086 H10
2087 E10
2150 J 1
2151 C 5
2152 C 5
2153 C 3
2154 J 3
2155 I 8
2156 I 4
2157 I 5
2158 H 7
2159 H 6
2160 H 5
2161 H 6
2162 C 8
2163 B 4
3051 I 2
3080 C12
3081 C13
3082 G14
3083 D15
3084 D14
3085 C15
3086 E10
3087 D16
3089 H15
3151 A 6
3152 B 3
3153 I 1
3154 K 2
3156 J 3
3157 I 8
3158 B 9
3162 G 8
3163 H 7
3164 I 6
3165 I 6
5080 H10
5150 B 6
7020 J 3
7080 F11
7085 D15
7150 D 2
7151 F 3
7153 C 9
9070 J 1
9071 A 7

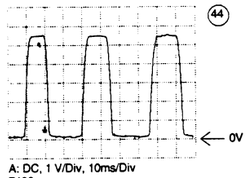
Deck Electronics (DE)



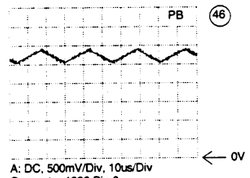
A: DC, 1 V/Div, 5ms/Div
T 7463 Emitter



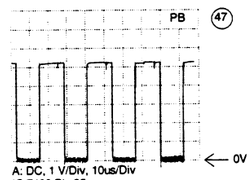
A: DC, 1 V/Div, 200ms/Div
IC 7460 Pin 6, 7



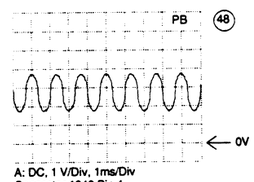
A: DC, 1 V/Div, 10ms/Div
7466



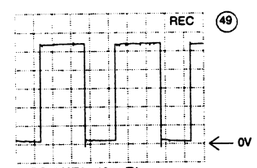
A: DC, 500mV/Div, 10us/Div
Connector 1930 Pin 6



A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 25

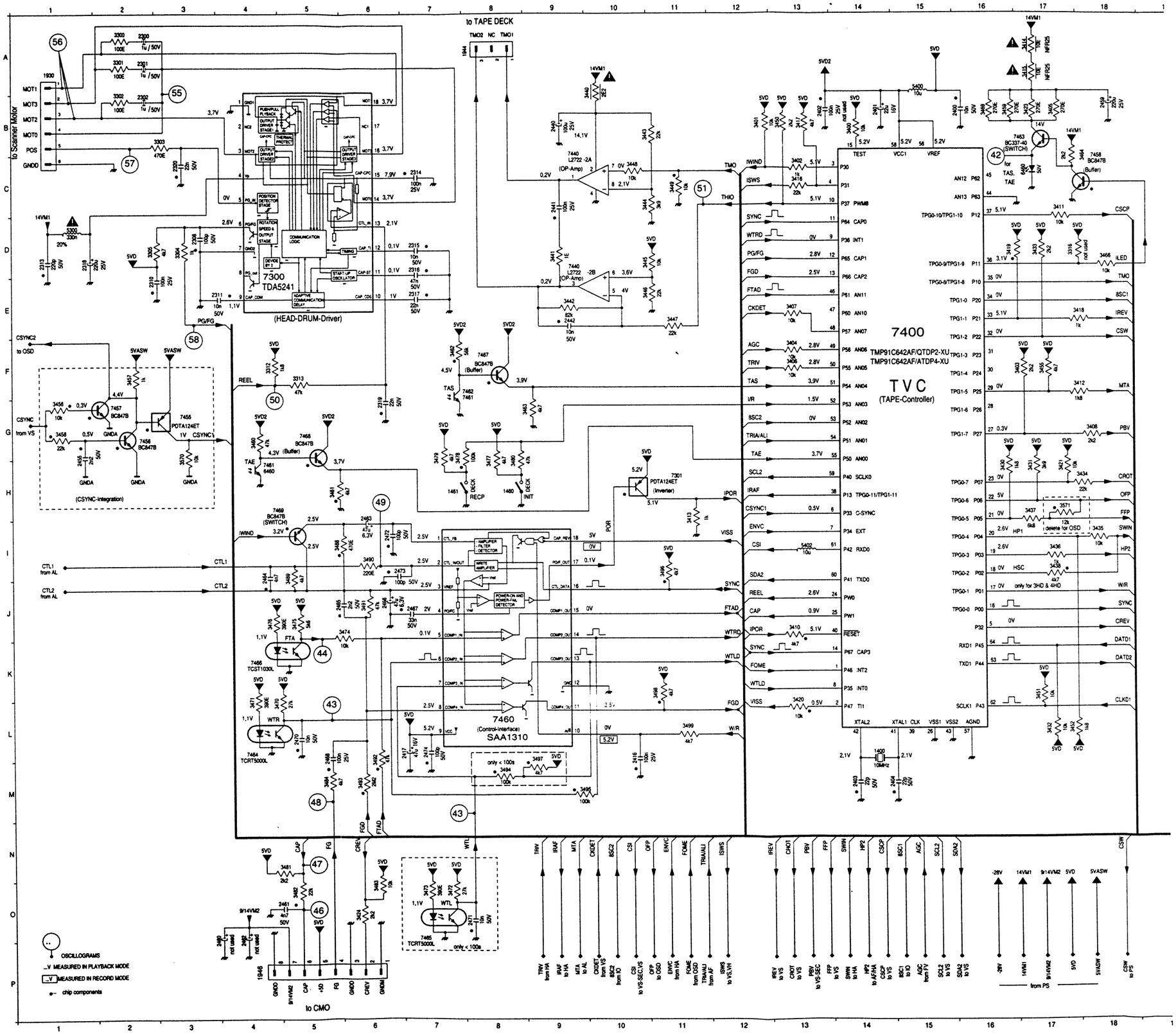


A: DC, 1 V/Div, 1ms/Div
Connector 1946 Pin 4



A: DC, 1 V/Div, 10ms/Div
IC 7460 Pin 2

3-10



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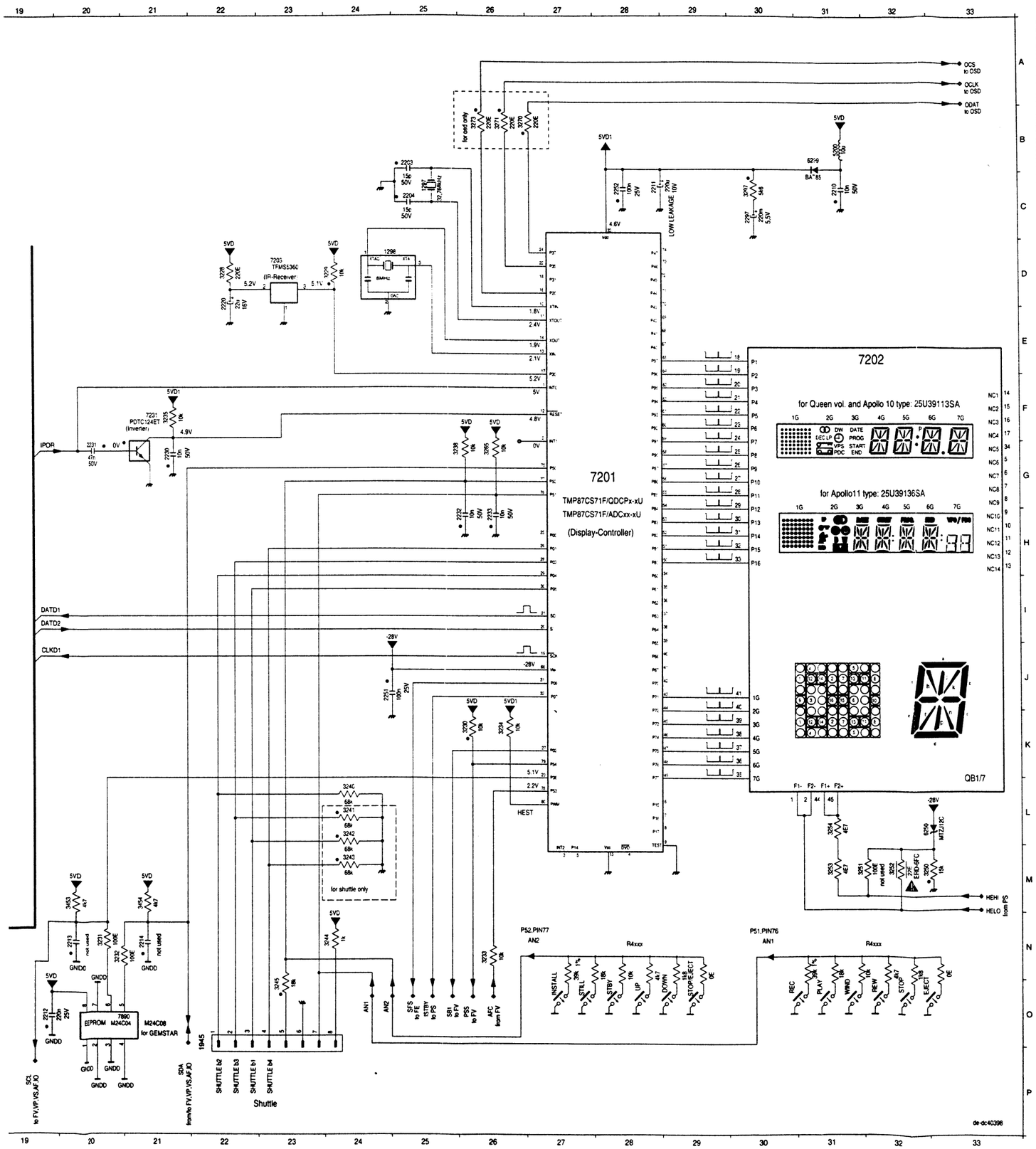
Display Control (DC)



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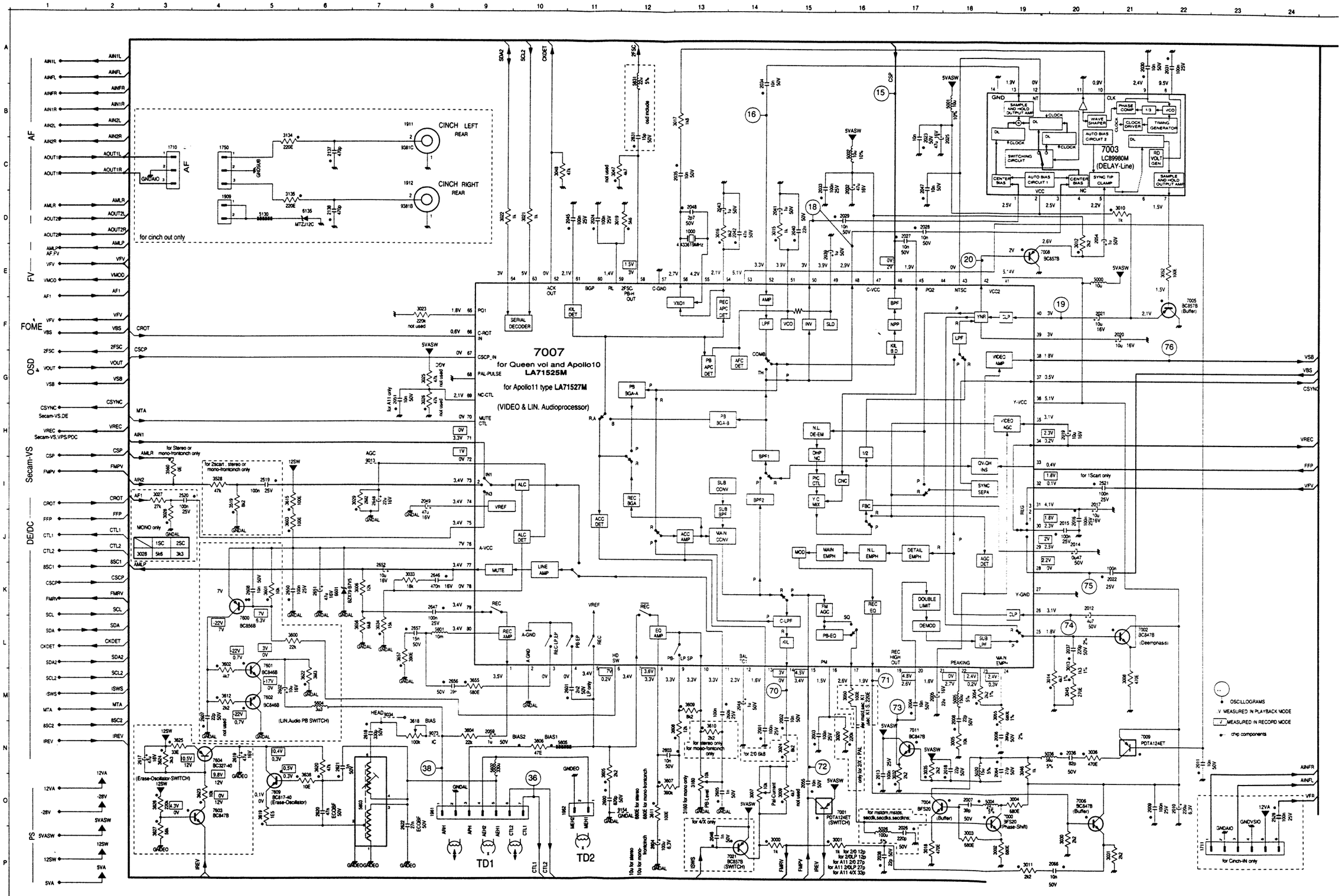
| | | |

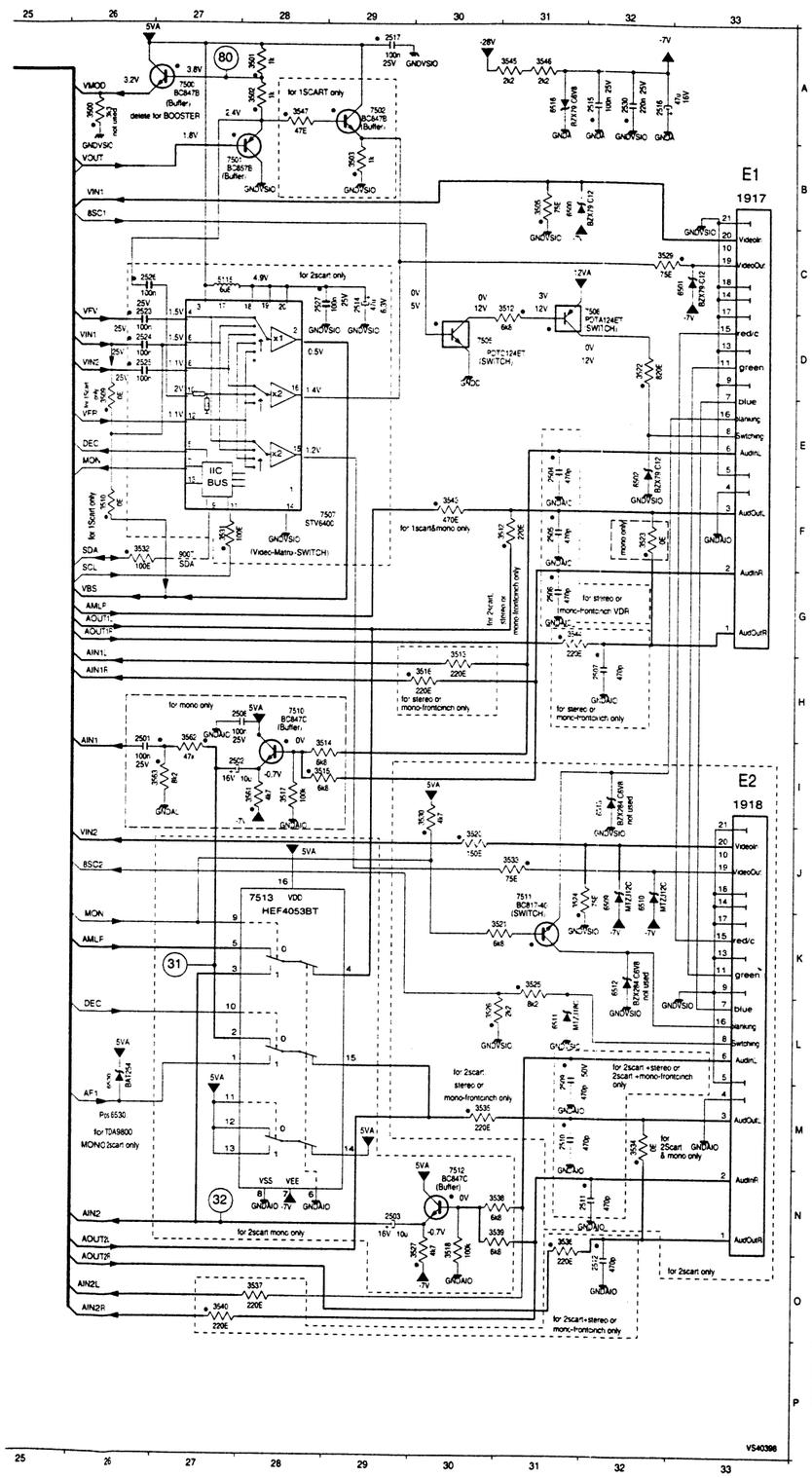
3-12

Video Signal Processing (VS), Audio Linear (AL)



3-13

In/Out (I/O)



1000 D13	3023 F 8	7505 D30
1710 C 3	3024 N15	7506 G31
1711 P22	3025 G 8	7507 F29
1750 C 4	3026 G 8	7510 H28
1909 D 4	3027 I 3	7511 J31
1911 B 8	3028 J 3	7512 N30
1912 C 8	3029 I 7	7513 J28
1917 B33	3030 P20	7600 L 5
1918 I33	3031 P21	7601 L 5
1961 O 8	3032 N17	7602 M 5
1962 O10	3033 K 8	7603 O 4
2001 N14	3034 L 7	7604 N 4
2002 M15	3035 N17	7609 O 5
2003 N15	3036 N20	9007 F27
2004 M17	3045 M20	9013 I 7
2005 M17	3046 N19	9034 M 7
2006 N19	3047 C11	9073 N 8
2007 O18	3048 C10	9154 O12
2008 M18	3050 M16	
2009 O21	3052 E22	
2010 O22	3054 M18	
2011 N22	3055 M19	
2012 K20	3134 B 5	
2013 N16	3135 D 5	
2014 J20	3160 O13	
2015 J20	3500 A26	
2016 J20	3501 A28	
2017 I20	3502 A28	
2018 N18	3503 B29	
2019 H20	3505 B31	
2020 F21	3509 E26	
2021 F20	3510 F26	
2022 K21	3512 C31	
2023 B17	3513 H30	
2024 D11	3514 I28	
2025 B18	3515 I28	
2026 P17	3516 H30	
2027 D17	3517 I28	
2028 D17	3518 N30	
2029 D16	3519 I 4	
2030 A21	3520 J30	
2031 A22	3521 K31	
2032 C16	3522 D32	
2033 C15	3523 F32	
2034 A14	3524 J31	
2035 C13	3525 K31	
2036 N20	3526 L30	
2037 L20	3527 N30	
2038 P18	3528 I 4	
2039 E15	3529 C32	
2040 D15	3530 I30	
2041 D14	3531 F27	
2042 D14	3532 F26	
2043 D13	3533 J31	
2044 M14	3534 M32	
2045 D11	3535 M30	
2046 P13	3536 N31	
2047 C17	3537 O28	
2048 D13	3538 N31	
2049 I 8	3539 N31	
2051 G 7	3540 Q27	
2054 D20	3542 F31	
2055 O15	3543 F30	
2059 N 9	3544 G31	
2064 N19	3545 A31	
2066 P20	3546 A31	
2137 C 6	3547 A28	
2138 D 6	3560 I 3	
2501 I26	3561 I28	
2502 I27	3562 I27	
2503 N29	3563 I27	
2504 E31	3600 L 5	
2505 F31	3601 K 5	
2506 G31	3602 L 4	
2507 H32	3603 J 5	
2508 H28	3604 N 9	
2509 L31	3605 N11	
2510 M31	3606 N10	
2511 N32	3607 O12	
2512 O32	3608 N13	
2514 C29	3609 M13	
2515 A32	3610 N13	
2516 A32	3611 O12	
2517 A29	3612 M 4	
2519 I 5	3615 I 5	
2520 I 3	3618 N 8	
2521 I21	3619 O 5	
2523 D26	3620 N 6	
2524 D26	3622 M 6	
2525 D26	3623 O 4	
2526 C26	3624 N 3	
2527 C28	3625 N 3	
2528 O24	3626 O 3	
2530 A32	3627 P 3	
2600 O11	3638 O 6	
2601 M11	3655 M 9	
2602 M 5	3656 L 7	
2603 N12	3657 L 7	
2604 P12	5000 E20	
2605 O13	5001 B18	
2606 M14	5002 C16	
2607 M 4	5004 O18	
2608 K 5	5005 M18	
2617 N 3	5020 N18	
2618 N 7	5026 P16	
2619 N 4	5036 N20	
2620 O 6	5115 C27	
2621 N 6	5130 D 5	
2622 O 8	5601 L 8	
2646 K 6	5602 N 9	
2647 K 6	5603 O 7	
2648 I 7	5604 M 6	
2650 K 5	5605 N10	
2651 K 6	5831 A12	
2652 K 7	6135 D 6	
2656 M 8	6500 B31	
2657 L 8	6501 C33	
2831 B12	6502 E32	
3000 P14	6509 J32	
3001 P16	6510 J32	
3002 P19	6511 L31	
3003 P18	6512 K32	
3004 O19	6513 I32	
3005 N18	6516 A31	
3006 K 7	6530 M26	
3007 O14	6601 K 6	
3008 M21	7000 O19	
3009 O15	7001 O16	
3010 D21	7002 L21	
3011 P19	7003 Q20	
3012 D20	7004 O17	
3013 L20	7005 F22	
3014 M20	7006 Q20	
3015 D14	7007 G10	
3016 D13	7008 E19	
3017 B13	7009 N21	
3018 P17	7011 N17	
3019 D11	7021 P14	
3020 N16	7500 A27	
3021 D10	7501 B27	
3022 D 9	7502 A29	

Interconnections:

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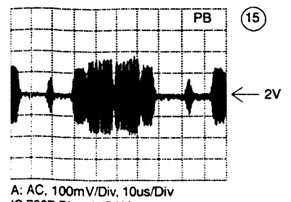
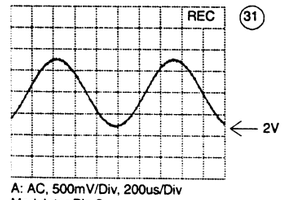
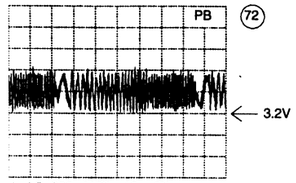


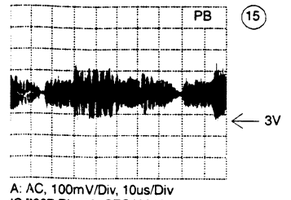
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (PAL)



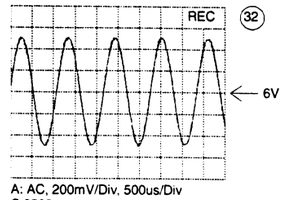
A: AC, 500mV/Div, 200us/Div
Modulator Pin 3



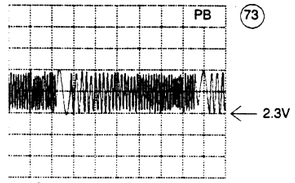
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 15



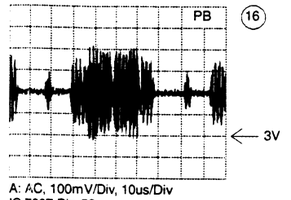
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (SECAM L)



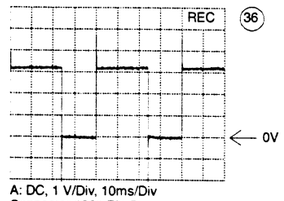
A: AC, 200mV/Div, 500us/Div
C 2503



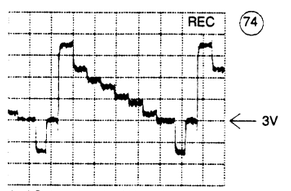
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 20



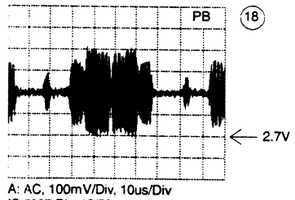
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 52



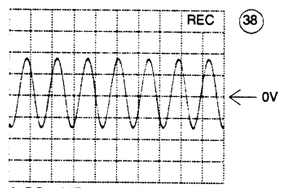
A: DC, 1 V/Div, 10ms/Div
Connector 1961 Pin 7



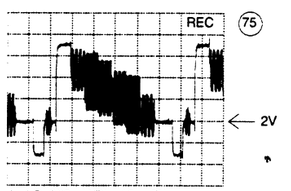
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 26



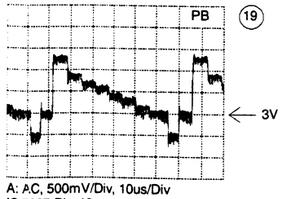
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 48/50



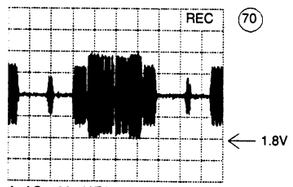
A: DC, 1 V/Div, 10us/Div
Connector 1951 Pin 1



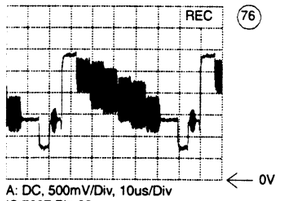
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 28



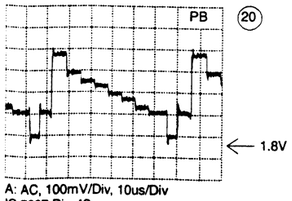
A: AC, 500mV/Div, 10us/Div
IC 7007 Pin 40



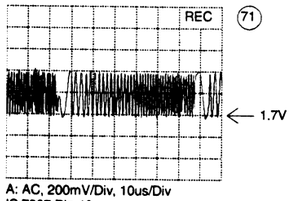
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 14



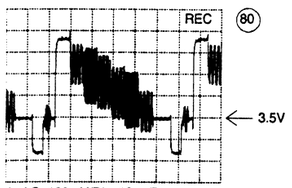
A: DC, 500mV/Div, 10us/Div
IC 7007 Pin 38



A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 42



A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 18



A: AC, 100mV/Div, 10us/Div
T 7500 Emitter

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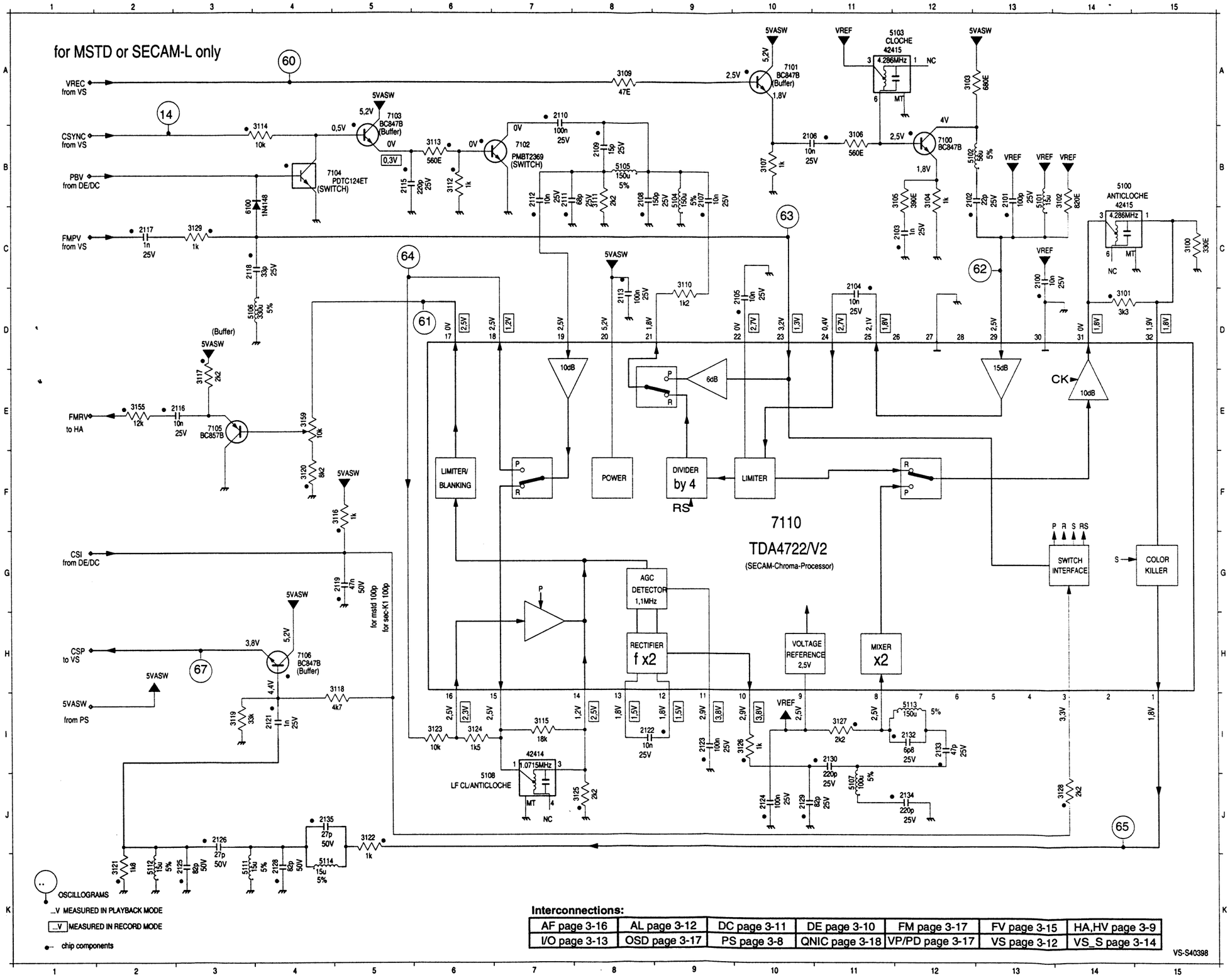
Video Signal Processing Secam (VS_S)



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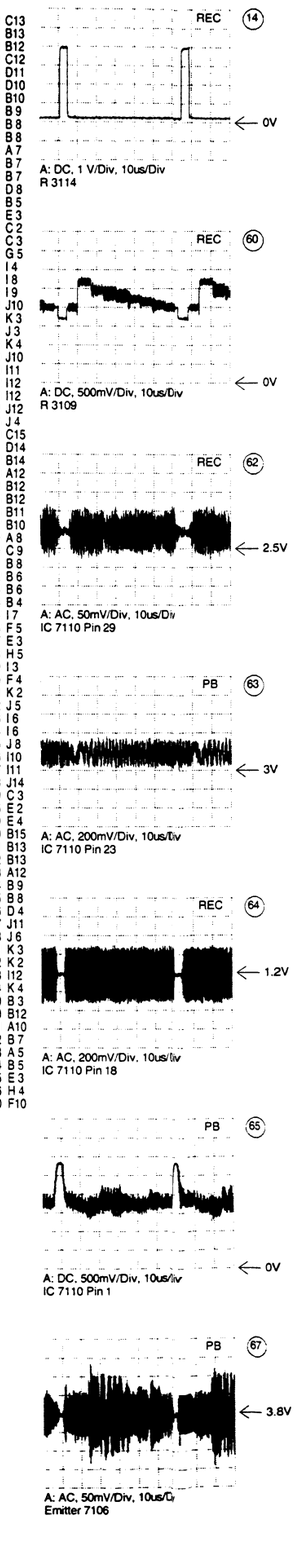
2100 C13
2101 B13
2102 B12
2103 C12
2104 D11
2105 D10
2106 B10
2107 B9
2108 B8
2109 B8
2110 A7
2111 B7
2112 B7
2113 D8
2115 B5
2116 E3
2117 C2
2118 C3
2119 G5
2121 I4
2122 I8
2123 I9
2124 J10
2125 K3
2126 J3
2128 K4
2129 J10
2130 I11
2132 I12
2133 I12
2134 J12
2135 J4
3100 C15
3101 D14
3102 B14
3103 A12
3104 B12
3105 B12
3106 B11
3107 B10
3109 A8
3110 C9
3111 B8
3112 B6
3113 B6
3114 B4
3115 I7
3116 F5
3117 E3
3118 H5
3119 I3
3120 F4
3121 K2
3122 J5
3123 I6
3124 I6
3125 J8
3126 I10
3127 I11
3128 J14
3129 C3
3155 E2
3159 E4
5100 B15
5101 B13
5102 B13
5103 A12
5104 B9
5105 B8
5106 D4
5107 J11
5108 J6
5111 K3
5112 K2
5113 I12
5114 K4
6100 B3
7100 B12
7101 A10
7102 B7
7103 A5
7104 B5
7105 E3
7106 H4
7110 F10



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Frontend (FV)

	* VERSIONS STEREO								* VERSIONS MONO				
Amtsbl.	PAL-BG	PAL-BG	PAL-I/fullband	PAL-BG	PAL-BG/SEC-LL'	SEC-K1	PAL-BG/SEC-DK	PAL-BG/SEC-DK	PAL-BG	PAL-I/fullband	PAL-BG/SEC LL'	SEC-K1	PAL-BG/SEC-DK/K
Pos.	FM STEREO	NICAM STEREO	NICAM STEREO	FM/NIC. STEREO	FM/NIC. STEREO	NICAM/STEREO	FM STEREO	FM/NIC. STEREO	FM MONO	FM MONO	FM/AM MONO	FM MONO	FM MONO
1701	TP 916MK2	TP 916MK2	TMRG1-110A	TMRG1-108A	TMRG2-104A	TMRG2-104A	TMRG1-203A	TMRG1-203A	TP 916MK2	TP944MK2/TMRG1-110A	TP926MK2	TP926MK2	TMRG1-203A
1701-MK1	TP 916	TP 916	TMRG1-104A	TMRG1-102A	TMRG2-102A	TMRG2-102A	TMRG1-201A	TMRG1-201A	TP 916	TP944/TMRG1-104A	TP926	TP926	TMRG1-201A
1719					K9456M	K9463M	K9463M	K9463M			K9456M		
1720	G1984M			G1984M	K3953M	G3956M	G3956M	G3956M			G1965M		
1721		G1984M	J1980M						G1961M	J1980M		K2955M	G1966M
1722													L9360M
1740	TRAP 5.5MHz	TRAP 5.5MHz	TRAP 6.0MHz	TRAP 5.5MHz	TRAP 5.5MHz	TRAP 6.5MHz	TRAP 5.5MHz	TRAP 5.5MHz	TRAP 5.5MHz	TRAP 6.0MHz	TRAP 5.5MHz	TRAP 6.5MHz	TRAP 5.5MHz
1745		EFC 5.5MHz	EFC 6.0MHz		EFC 6.0MHz		EFC 6.5MHz	EFC 6.5MHz	EFC 5.5MHz	EFC 6.0MHz	EFC 6.0MHz	EFC 6.5MHz	EFC 5.5MHz
1746	EFC 5.5MHz			EFC 5.5MHz	EFC 5.5MHz	EFC 6.5MHz	EFC 5.5MHz	EFC 5.5MHz			EFC 5.5MHz		EFC 6.5MHz
1747	EFC 5.74MHz			EFC 5.74MHz	EFC 5.74MHz		EFC 5.74MHz	EFC 5.74MHz					
1748							EFC 6.25MHz	EFC 6.25MHz					
1975		QNIC	QNIC	QNIC	QNIC	QNIC		QNIC					
2709						100n			100n	100n		100n	100n
2730		47p	47p		47p		47p	47p	47p	47p	47p	47p	47p
2731	47p			47p	47p	47p	47p	47p			47p		47p
2732	47p			47p	47p		47p	47p					
2735							47p	47p					
2745					220p						220p		
2750	2u2			2u2	2u2		2u2	2u2			2u2		
2791				4u7	4u7			4u7					
2792				4u7	4u7			4u7					
2793	15p	15p	15p	15p							15p		15p
2795	1n	1n	1n	1n		1n	1n	1n	1n	1n		1n	1n
3735	390E			390E	390E	390E	390E				180E		
3747	270E	270E	270E	270E	390E	270E	330E	330E	330E	270E	390E	270E	330E
3748		4k7(PLL)	4k7(PLL)		22k(BD1)				4k7(PLL)	4k7(PLL)	22k(BD1)	4k7(PLL)	4k7(PLL)
3749					680E						680E		
3750					330E						330E		
3760		1k	820E						1k	820E		1k	1k
3764	1k			1k	820E	1k	820E	820E			820E		
3915	0E	0E	0E	0E		0E			0E	0E		0E	0E
3917	0E	0E	0E	0E		0E							
3972	0E			0E									
3973			0E										0E
3984		0E	0E			0E							
3985		0E	0E			0E							
3987	0E	0E	0E	0E							0E		0E
3988					0E						0E		
5740	15u	15u	15u	15u	12u	15u	15u	15u	15u	15u	12u	15u	15u
5741	39u	39u	39u	39u							39u		39u
7720		TDA9800T	TDA9800T						TDA9800T	TDA9800T		TDA9800T	TDA9800T
7721	TDA9813T			TDA9813T	TDA9814T	TDA9813T	TDA9813T	TDA9813T			TDA9812T		
7722					74HC4053D		74HC4053D	74HC4053D			74HC4053D		

for TDA 9800T only: 2743, 2746, 3706, 3732, 3737, 3910, 3912, 3916, 3919, 3926, 3986, 3990
for TDA 9812T only: 2725, 2741, 2744, 2749, 2755, 2751, 3704, 3736, 3911, 3913, 3923, 3925, 3950, 3986
for TDA 9813T only: 2726, 2733, 2744, 2749, 2756, 2751, 3704, 3765, 3911, 3913, 3923, 3925, 3986
for TDA 9814T only: 2726, 2733, 2741, 2744, 2749, 2750, 2751, 3704, 3765, 3911, 3913, 3923, 3925, 3950, 3986

PAL BG,I/SEC LL'	PAL BG/SEC DK,K
Stereo SEC L' = H PAL SEC L = L	Stereo PAL BG = L PAL/SEC DK = H
Mono SEC L' = H PAL SEC L = L	

A: DC, 100mV/Div, 10us/Div
Tuner Pin 17

A: DC, 500mV/Div, 200us/Div
IC 7721 Pin 10

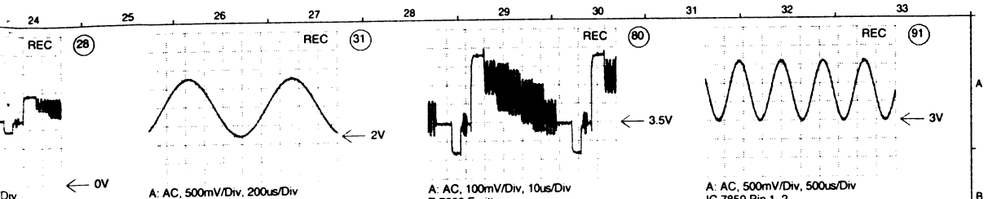
A: DC, 500mV/Div, 10us/Div
T 7730 Emitter

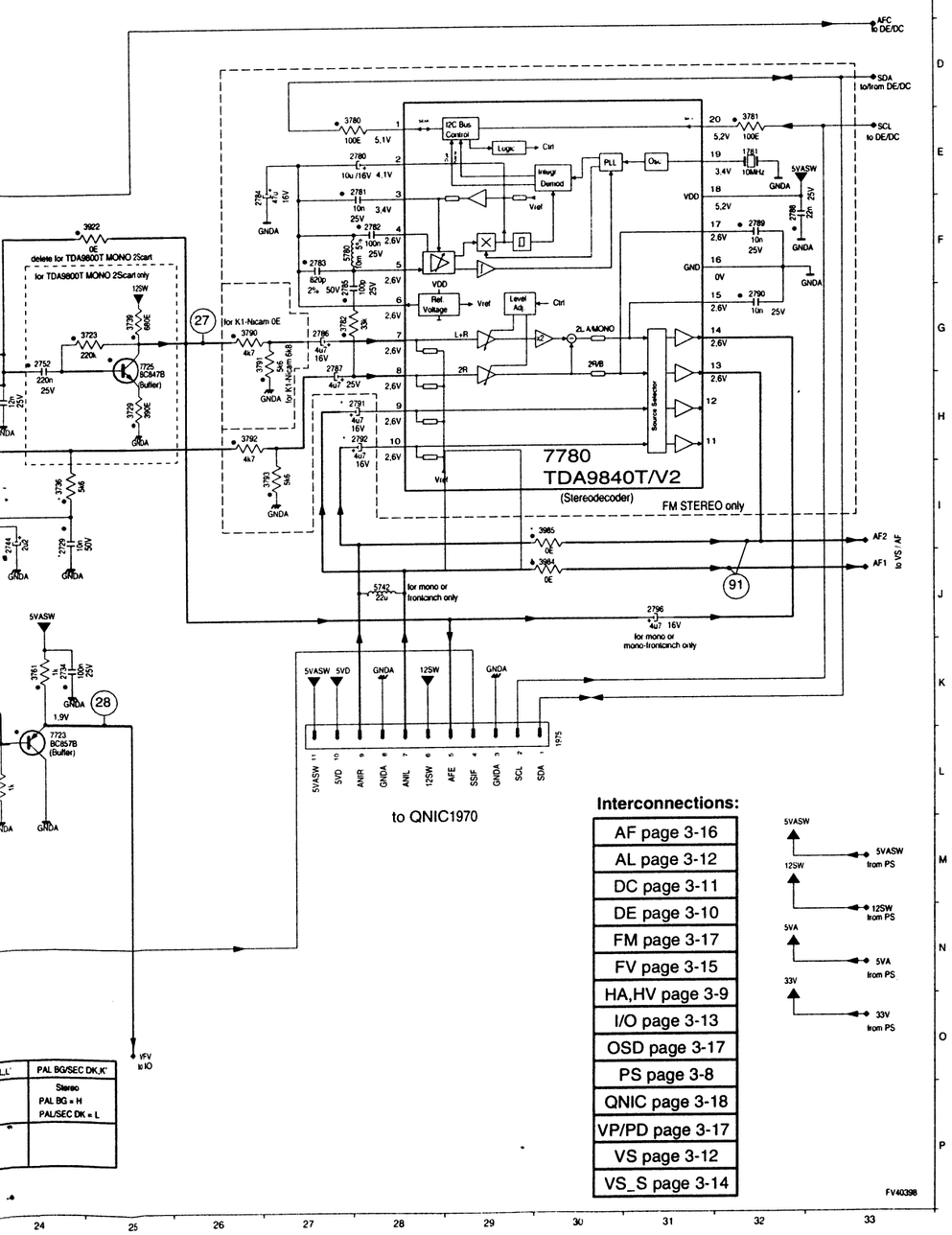
A: AC, 500mV/Di
Modulator Pin 3

PAL BG,I/SEC LL'	PAL BG/SEC DK,K
Stereo SEC L = L PAL = H	Stereo BG = H DK = H
Mono SEC L = L PAL = H	Mono BG = L DK = H

PAL BG,I/SEC LL'	PAL BG/SEC DK,K
Stereo PAL BG = H PAL I = L	Stereo PAL BG = H PAL/SEC DK = L
Mono PAL BG = H PAL I = L	

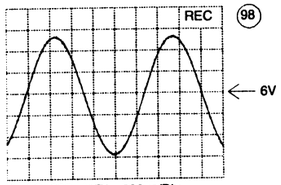
OSCILLOGRAMS
.V MEASURED IN PLAYBACK MODE
chip components



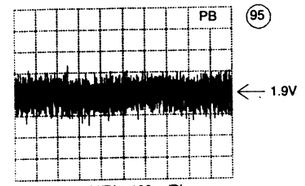


1701 L 2 1719 E14 1720 H13 1721 I13 1722 M13 1740 N19 1745 K21 1746 L21 1747 M21 1748 L21 1781 E32 1908 P10 1910 P10 1975 L30 2700 K 3 2701 P 3 2702 P 5 2704 K 2 2705 P 4 2706 L10 2707 M11 2708 K 6 2709 P 5 2710 P 7 2715 O 7 2716 O 8 2722 F12 2723 O12 2726 H24 2727 H23 2728 I23 2729 I24 2730 K21 2731 L21 2732 M21 2733 M23 2734 K24 2735 L21 2740 N17 2741 K19 2742 L16 2743 I23 2744 I24 2745 N20 2746 E16 2747 F22 2748 E19 2749 E16 2750 F16 2751 K16 2752 G24 2753 D15 2780 E28 2781 E28 2782 F28 2783 F27 2784 E27 2785 F27 2786 G27 2787 G27 2788 F32 2789 F32 2790 G32 2791 H28 2792 H26 2793 M18 2794 P 6 2795 K10 2796 J31 3702 N 8 3703 O 8 3704 I16 3705 P 6 3706 J16 3707 M 8 3708 M 8 3709 L 9 3712 L13 3715 N13 3723 G25 3725 J 4 3726 K 6 3729 H25 3730 E23 3731 F23 3732 E17 3735 E17 3736 I24 3737 G23 3739 G25 3742 L17 3744 O16 3747 N20 3748 D20 3749 M19 3750 N20 3760 L23 3761 K24 3762 L23 3764 K23 3765 M22 3766 D12 3767 F13 3768 G12 3769 E13 3770 F13 3771 E14 3772 O22 3773 M12 3780 E28 3781 E32 3782 G27 3790 G26 3791 G27 3792 H26 3793 I27 3910 K17 3911 K18 3912 K18 3913 K18 3914 J 2 3915 M19 3916 N20 3917 N21 3918 K21 3919 J17 3922 F25 3923 J23 3925 G23 3926 I23 3950 N16 3972 G15 3973 L21 3980 E13 3981 G14 3984 J30 3985 I30 3986 N22 3988 E20 3989 L16 3990 D21 5700 K 5

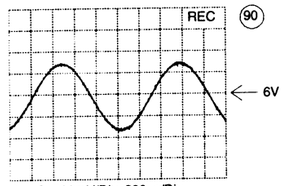
5702 P 3 5703 J 4 5705 P 6 5720 M 8 5721 M10 5725 E19 5726 K16 5740 N19 5741 M18 5742 J28 5780 F27 6760 E13 6761 F13 7720 G17 7721 F20 7722 O21 7722 O18 7722 P20 7723 L24 7724 M17 7725 G25 7726 D19 7728 M13 7729 G13 7730 F14 7731 O14 7780 H30 9005 P 9



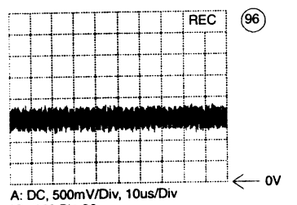
A: AC, 200mV/Div, 200us/Div
IC7850 Pin 5, 6



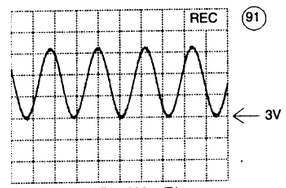
A: AC, 200mV/Div, 100us/Div
IC 7850 Pin 37



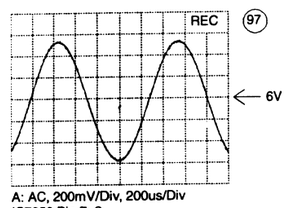
A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 11



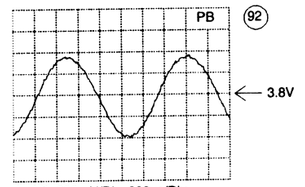
A: DC, 500mV/Div, 10us/Div
IC 7850 Pin 36



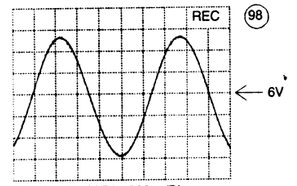
A: AC, 500mV/Div, 500us/Div
IC 7850 Pin 1, 2



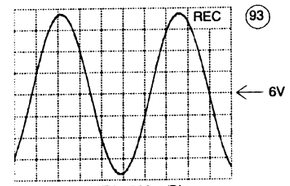
A: AC, 200mV/Div, 200us/Div
IC7850 Pin 7, 8



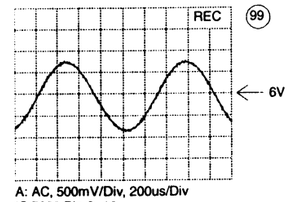
A: AC, 200mV/Div, 200us/Div
IC 7850 Pin 19



A: AC, 200mV/Div, 200us/Div
IC7850 Pin 5, 6



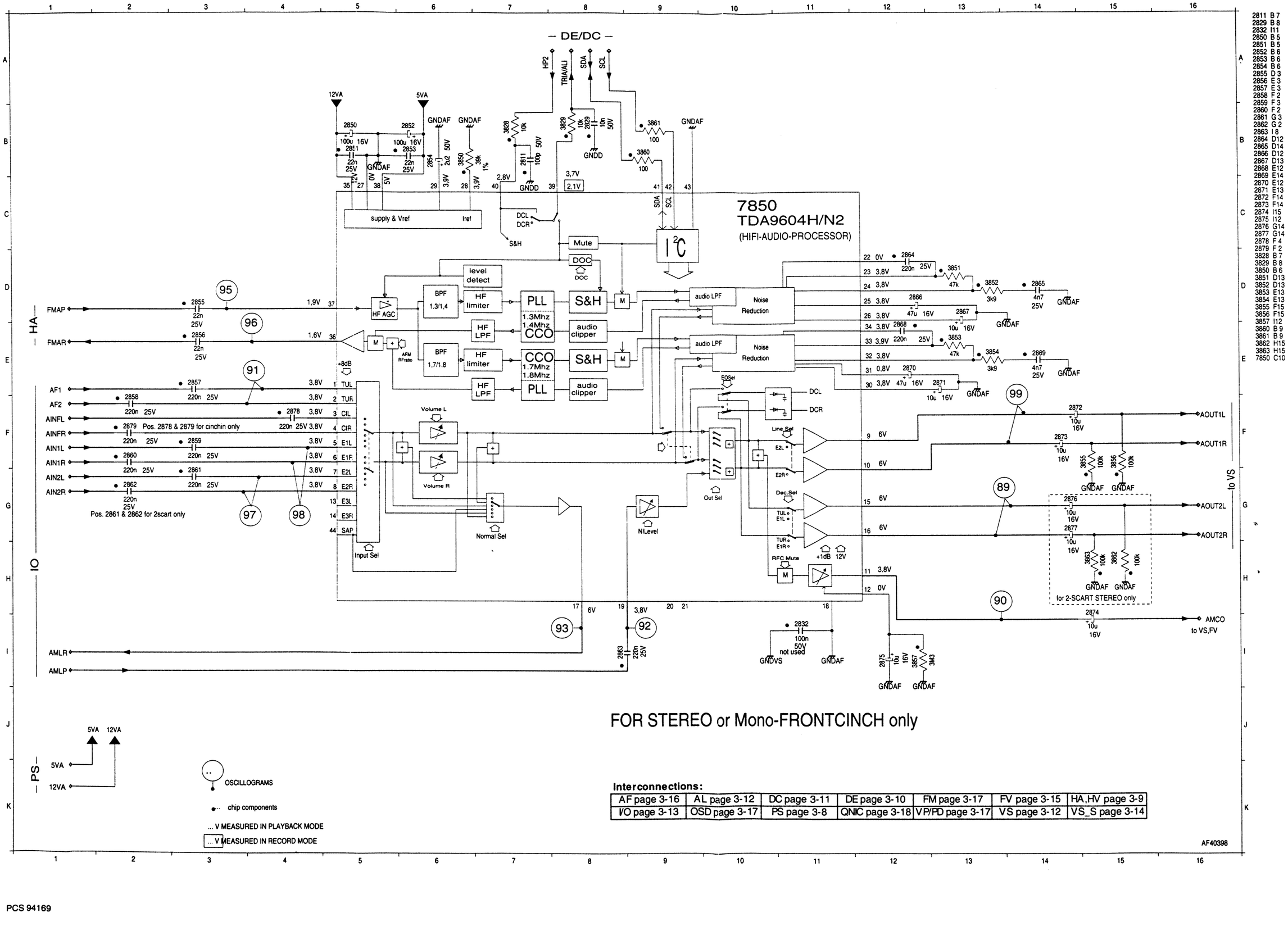
A: AC, 200mV/Div, 200us/Div
IC 7850 Pin 17



A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 9, 10

3-16

Audio FM Processing (AF)

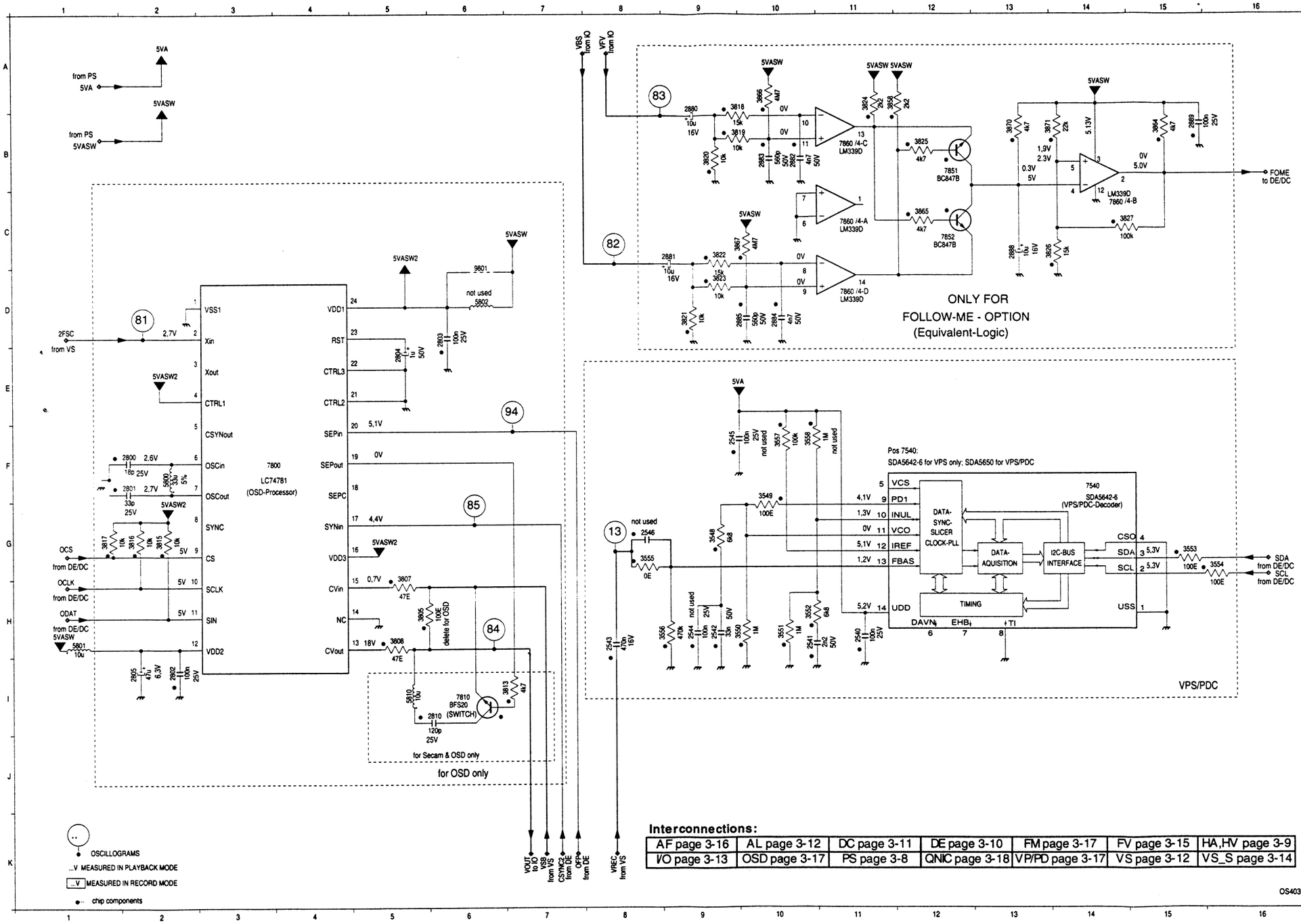


2811 B 7
2829 B 8
2832 I 11
2850 B 5
2851 B 5
2852 B 6
2853 B 6
2854 B 6
2855 D 3
2856 E 3
2857 E 3
2858 F 2
2859 F 3
2860 F 2
2861 G 3
2862 G 2
2863 I 8
2864 D12
2865 D14
2866 D12
2867 D13
2868 E12
2869 E14
2870 E12
2871 E13
2872 F14
2873 F14
2874 I15
2875 I12
2876 G14
2877 G14
2878 F 4
2879 F 2
3828 B 7
3829 B 8
3850 B 6
3851 D13
3852 D13
3853 E13
3854 E13
3855 F15
3856 F15
3857 I12
3860 B 9
3861 B 9
3862 H15
3863 H15
7850 C10

Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

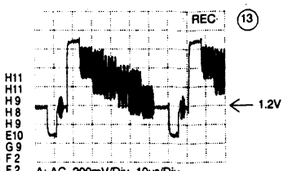
On Screen Display (OS), Follow Me (FM), Video Programming System / Programm Delivery Control (VP/PD)



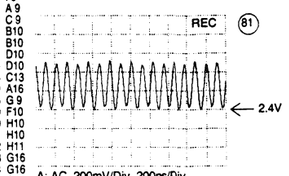
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

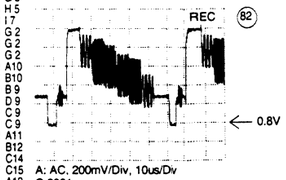
2540 H11
2541 H11
2542 H9
2543 H8
2544 H9
2545 E10
2546 G9
2800 F2
2801 F2
2802 H2
2803 D6
2804 D5
2805 H2
2810 I6
2880 A9
2881 C9
2882 B10
2883 B10
2884 D10
2885 D10
2888 C13
2889 A16
3548 G9
3549 F10
3550 H10
3551 H10
3552 H11
3553 G16
3554 G16
3555 G9
3556 H9
3557 F10
3558 E11
3805 H6
3807 G5
3808 H5
3813 I7
3815 G2
3816 G2
3817 G2
3818 A10
3819 B10
3820 B9
3821 D9
3822 C9
3823 C9
3824 A11
3825 B12
3826 C14
3827 C15
3858 A12
3864 A15
3865 C12
3866 A10
3867 C10
3870 A13
3871 A14
5800 F2
5801 H1
5802 D6
5810 I5
7540 F14
7800 F4
7810 I6
7851 B12
7852 C12
7860 B15
7860 C11
7860 D11
7860 B11
9801 C6



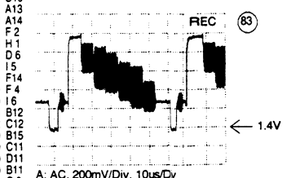
A: AC, 200mV/Div, 10us/Div
IC 7540 Pin 13



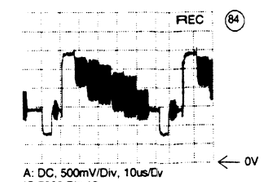
A: AC, 200mV/Div, 200ns/Div
IC 7800 Pin 2



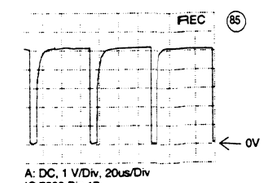
A: AC, 200mV/Div, 10us/Div
C 2881



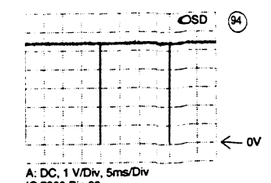
A: AC, 200mV/Div, 10us/Div
C 2880



A: DC, 500mV/Div, 10us/Div
IC 7800 Pin 13



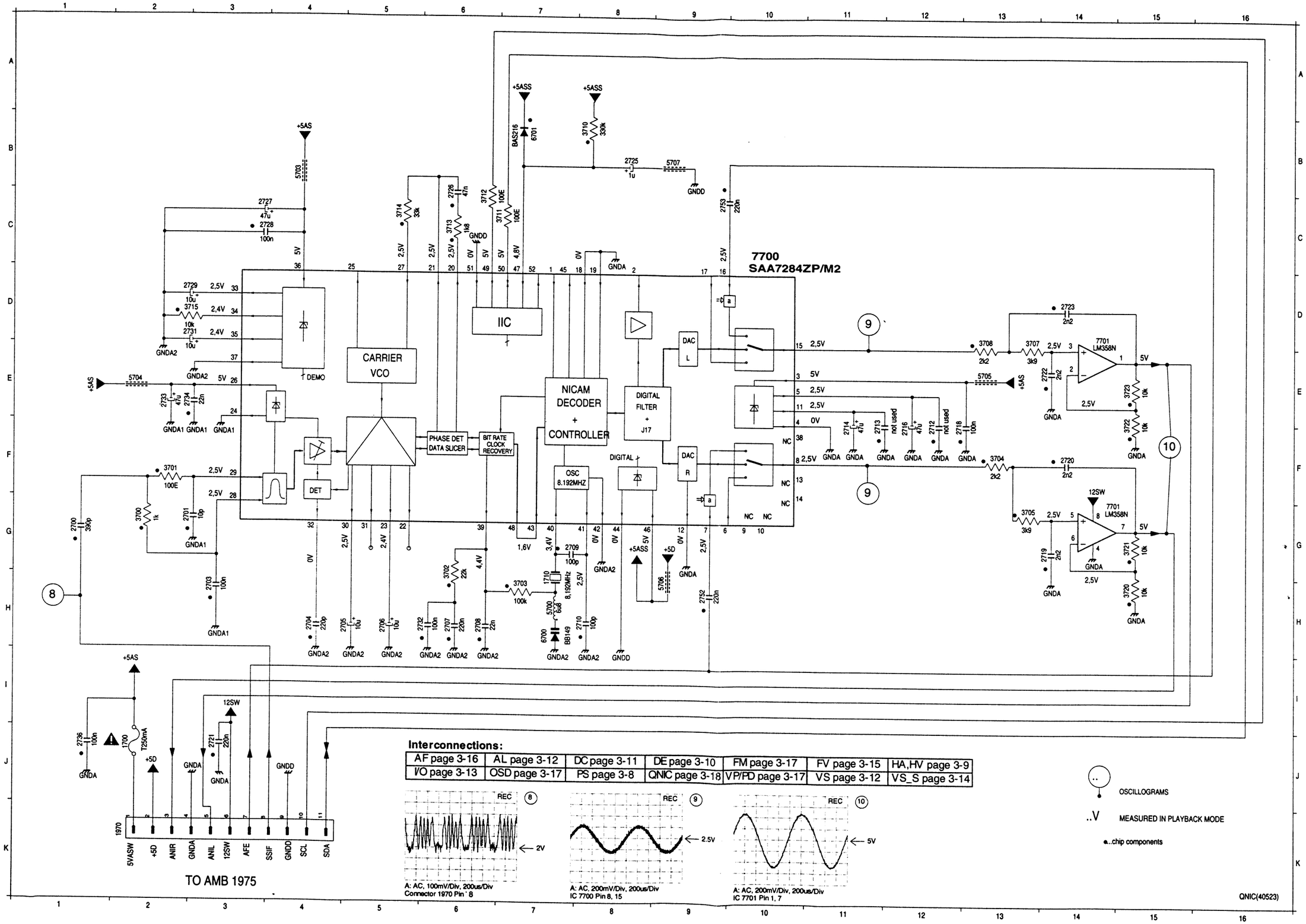
A: DC, 1 V/Div, 20us/Div
IC 7800 Pin 17



A: DC, 1 V/Div, 5ms/Div
IC 7800 Pin 20

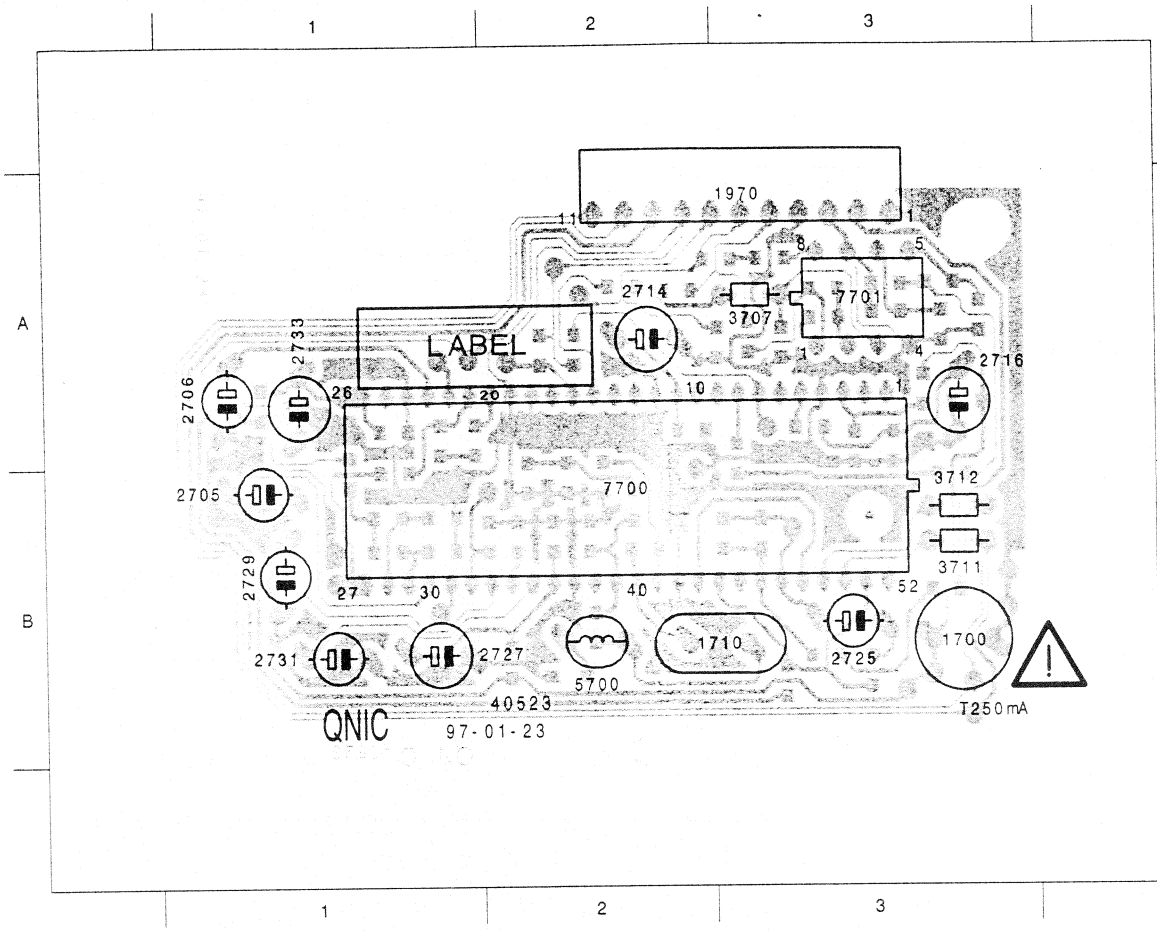
3-18

Nicam Board (QNIC)

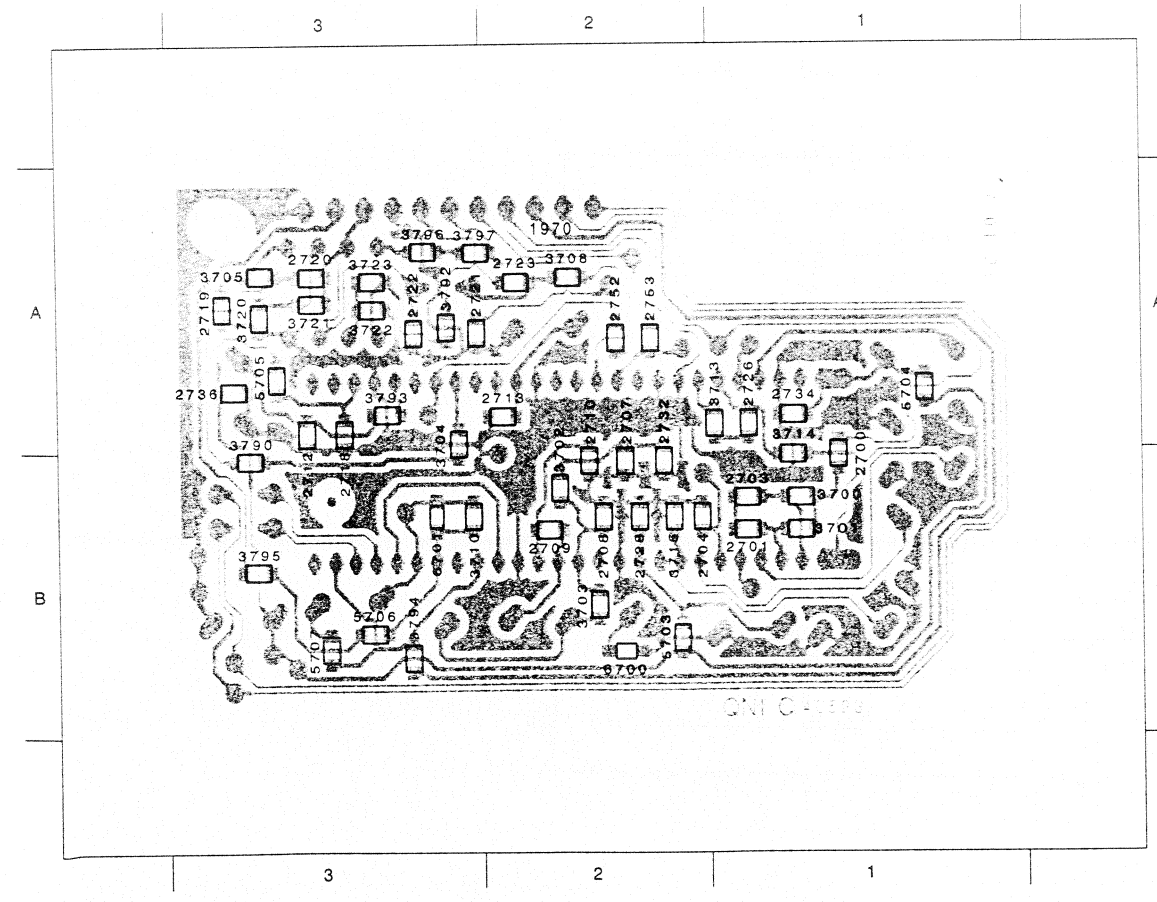


1700 J 2
1710 H 7
1970 K 2
2700 G 1
2701 G 2
2703 H 3
2704 H 4
2705 H 5
2706 H 5
2707 H 6
2708 H 6
2709 G 7
2710 H 8
2712 F12
2713 F11
2714 F11
2716 F12
2718 F12
2719 G14
2720 F14
2721 J 3
2722 E14
2723 D14
2725 B 8
2726 C 6
2727 C 3
2728 C 3
2729 D 2
2731 D 2
2732 H 6
2733 E 2
2734 E 2
2736 J 1
2752 H 9
2753 C 9
3700 G 2
3701 F 2
3702 G 6
3703 H 7
3704 F13
3705 G13
3707 D13
3708 D13
3710 B 8
3711 C 7
3712 C 6
3713 C 6
3714 C 5
3715 D 3
3720 H15
3721 G15
3722 E15
3723 E15
5700 H 7
5703 B 4
5704 E 2
5705 E13
5706 H 9
5707 B 9
6700 H 7
6701 B 7
7700 C 7
7701 D14
7701 G14

Nicam Board (QNIC)

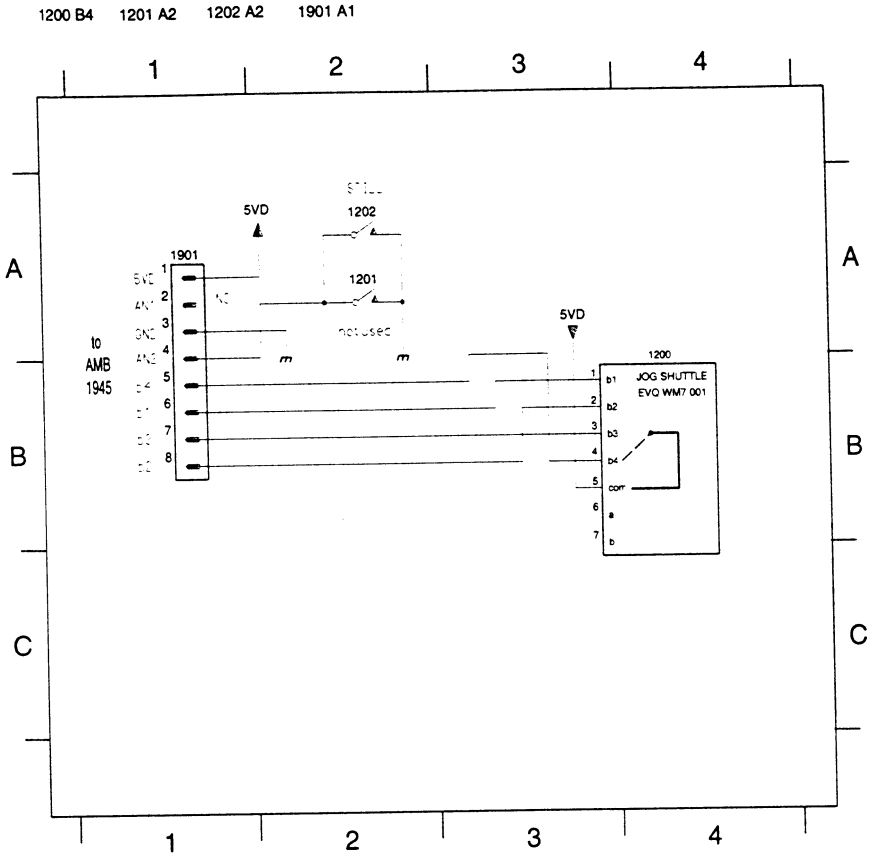


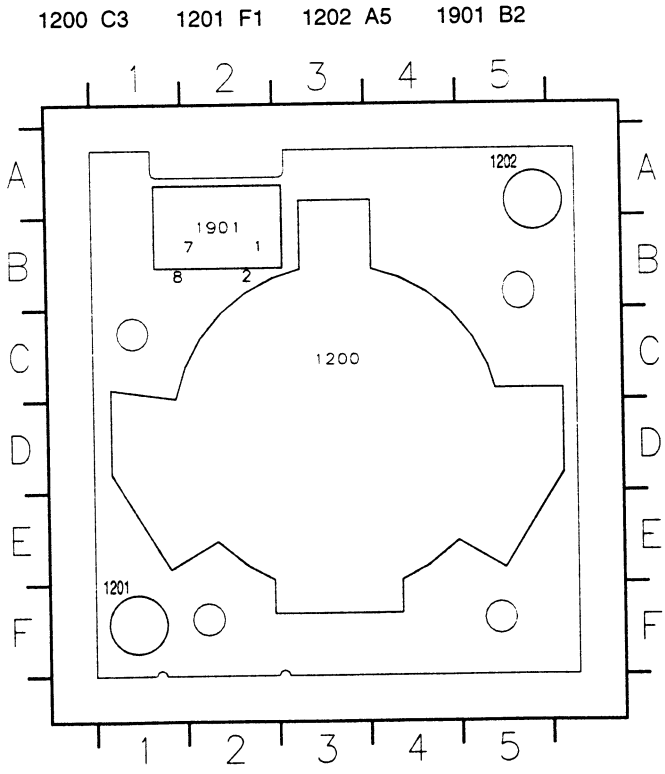
1700 B 3
1710 B 3
1970 A 3
2705 B 1
2706 A 1
2714 A 2
2716 A 3
2725 B 3
2727 B 1
A 2729 B 1
2731 B 1
2733 A 1
3707 A 3
3711 B 3
3712 B 3
5700 B 2
7700 B 2
7701 A 3



2700 B 1
2701 B 1
2703 B 1
2704 B 2
2707 B 2
2708 B 2
2709 B 2
2710 B 2
2712 A 3
A 2713 A 2
2718 A 3
2719 A 3
2720 A 3
2721 A 3
2722 A 3
2723 A 2
2726 A 1
2728 B 2
2732 B 2
B 2734 A 1
2736 A 3
2752 A 2
2753 A 2
3700 B 1
3701 B 1
3702 B 2
3703 B 2
3704 A 3
3705 A 3
3708 A 2
3710 B 3
3713 A 1
3714 B 1
3715 B 2
3720 A 3
3721 A 3
3722 A 3
3723 A 3
3790 B 3
3792 A 3
3793 A 3
3794 B 3
3795 B 3
3796 A 3
3797 A 3
5703 B 2
5704 A 1
5705 A 3
5706 B 3
5707 B 3
6700 B 2
6701 B 3

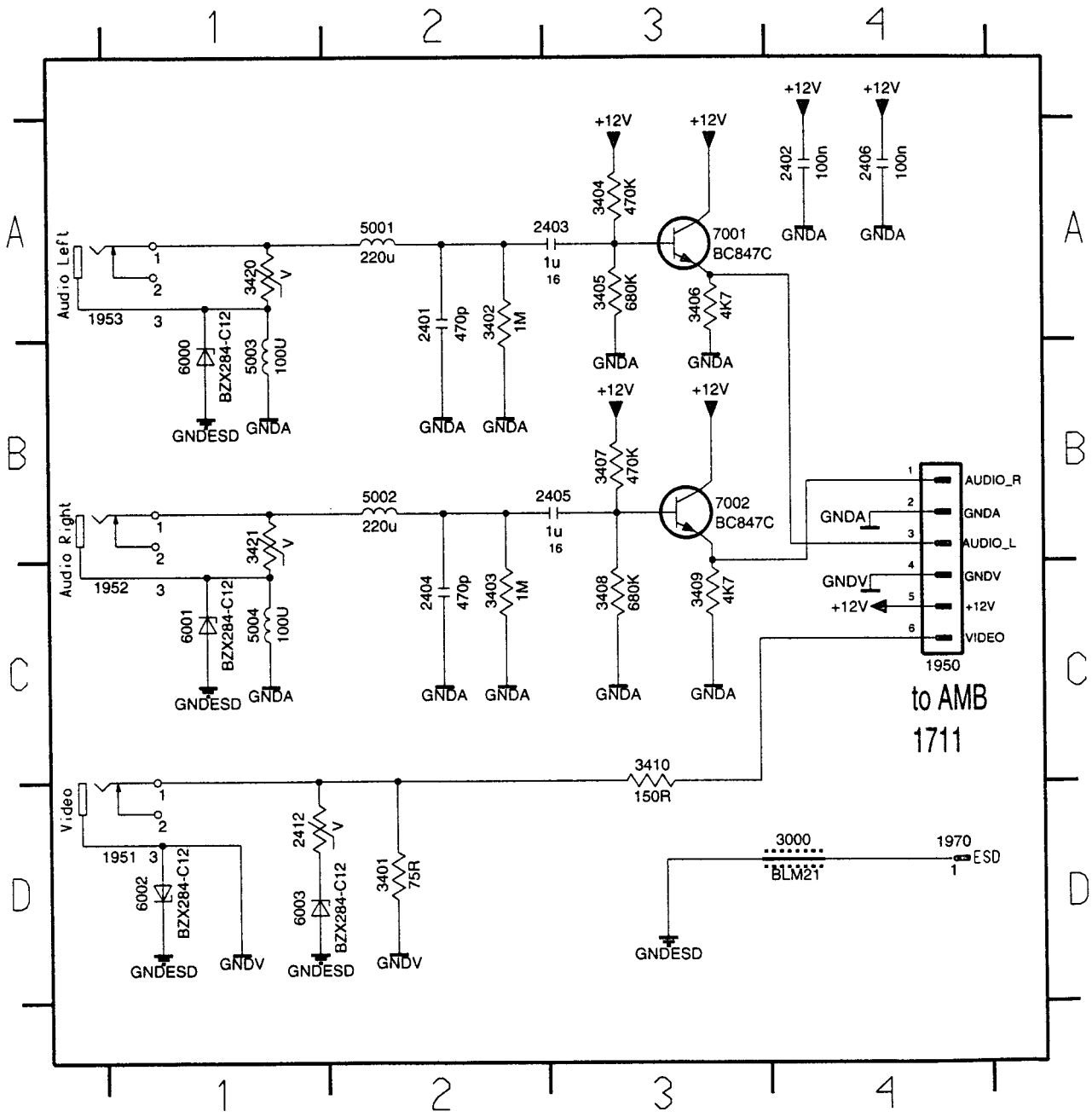
Shuttle Board (ASP10)



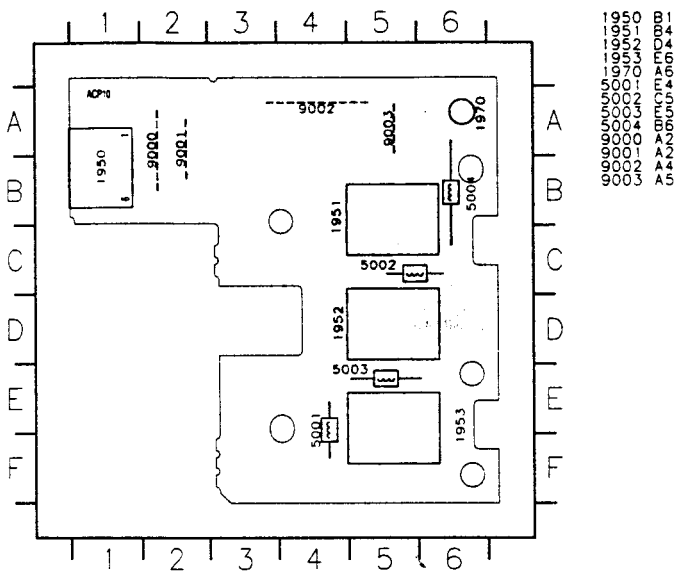


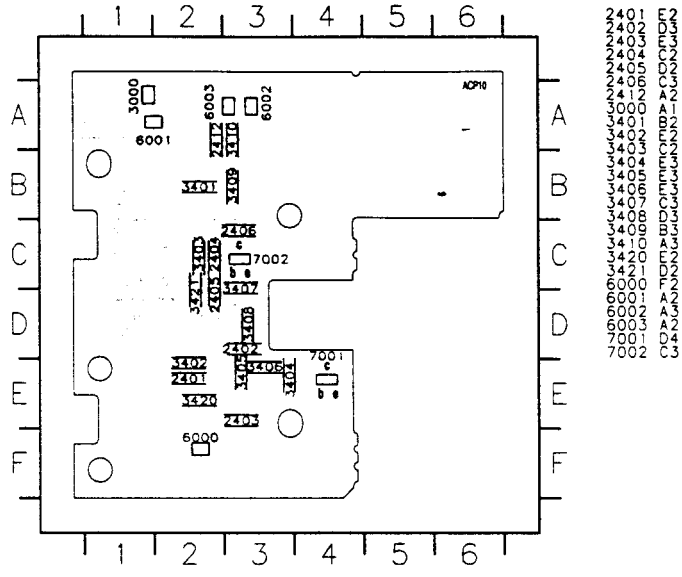
Socket Boards (ACP1x)

1950	C4	2402	A4	3000	D4	3406	A3	3421	B1	6001	C1
1951	D1	2403	A3	3401	D2	3407	B3	5001	A2	6002	D1
1952	C1	2404	C2	3402	A2	3408	C3	5002	B2	6003	D1
1953	A1	2405	B3	3403	C2	3409	C3	5003	B1	7001	A3
1970	D4	2406	A4	3404	A3	3410	C3	5004	C1	7002	B3
2401	A2	2412	D1	3405	A3	3420	A1	6000	B1		

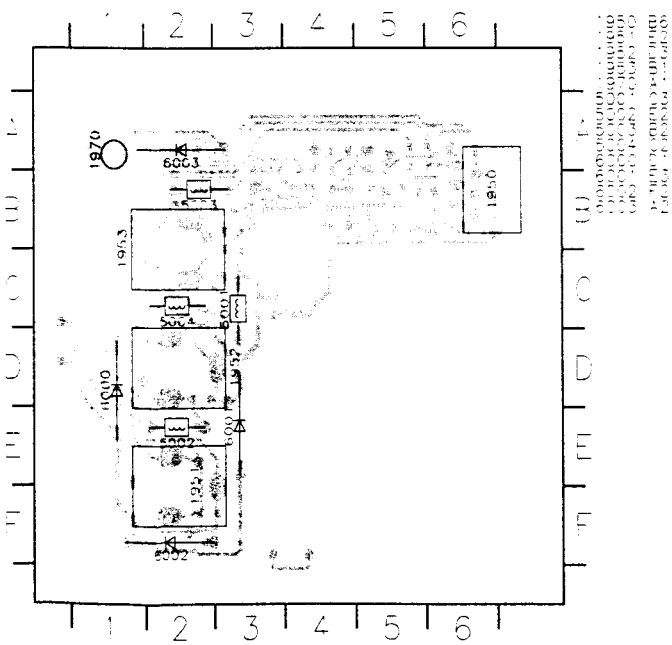


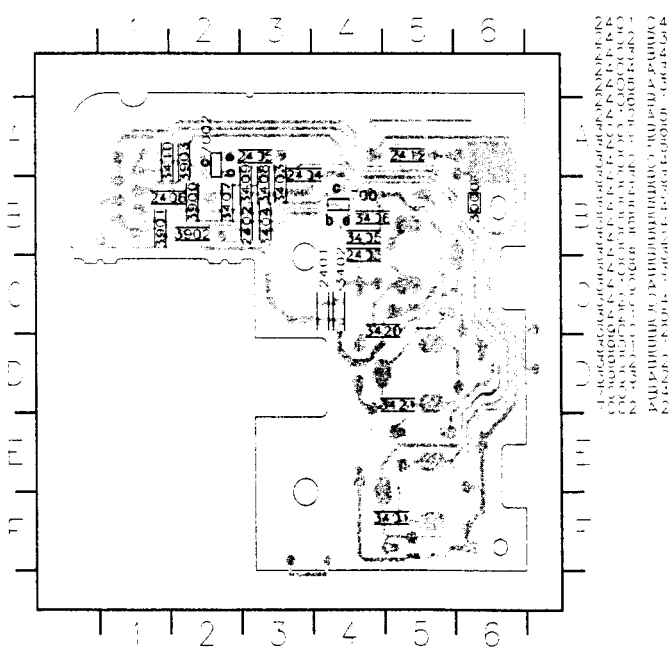
Socket Boards (ACP10)





Socket Boards (ACP1)





4. DRIVE ASSEMBLY

4.1 MECHANICAL PARTS LIST

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	R	S	T	
1	Rec. protection lever (with spring)									402 10202
2	Chassis mounting spring (2x)									492 71022
5	Main brake left				P					
6	Main brake spring (2x)				P					
9	Damping roller *)									528 70782
10	Main brake right				P					
11	Tension arm spring									492 33317
12	Tension crank									403 70551
13	Slip ring						R			
14	Tension band				P					
15	Tension arm									403 70547
16	Erase head									249 10522
17	Swivelling gear						R			
18	Brake gear (2x)						R			
19	Swivelling plate						R			
20	Reel table (S)						R			
20a	Reel table (T)						R			
21	Headamplifier holder								T	
22	Bracket								T	
23	Roller unit left									528 70771
24	Loading arm left	B								
25	Loading arm right	B								
26	Roller unit right									528 70772
27	Loading gear	B								
30	Reverse clip					Q				
31	Reverse lever					Q				
32	Intermediate lever					Q				
33	Head disc 2/0									691 10583
33	Head disc 2/0-LP									691 10585
34	Scanner motor 2/0 (with screws)									361 10963
34	Scanner assy. 4/0 (Head disc and motor)									218 12031
34	Scanner assy. 4/2 (Head disc and motor)									218 12032
35	Cleaning roller									528 70773
36	A/C Head (with clip and screws)									249 10468
37	Pressure roller (with spring)									528 70774
38	Threading motor									361 10809
39	Threading belt									358 20421
40	Motor holder								T	
41	Pressure roller guide							S		
42	Reverse brake				P					
44	Slider gear	B						S		
45	Cam wheel							S		
46	Cam shaft							S		
47	Pulley shaft									528 81462
48	Worm shaft							S		
49	Chassis mounting clip								T	
50	WD-holder								T	

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	R	S	T	
101	Cassette loader trigger			L						
102	Clip			L						
103	Cassette loader gear1			L						
104	Cassette loader spring			L						
105	Cassette loader gear2			L						
106	Spindle									535 93277
111	Cam wheel reverse	B								
112	Tension lever								T	
113	Cam wheel tension	B								
114	Clutch lever (with spring)									403 70549
115	Clutch									528 20736
116	Changing gear		I							
117	Double gear		I							
118	Light prism								T	
119	Init flap and holder								T	
120	Cam wheel lever								T	
121	S-VHS lever								T	
122	Prism rihgt								T	
123	Prism left								T	
125	Main slider								T	
126	Driving belt									358 31166
127	Capstan motor (with screws)									361 10805
129	Reverse kicker with transmission gears *)									522 20451
128	Gear pulley		I							
150	Lift									443 64112
KIT	B									310 31955
KIT	I									310 31963
KIT	L									310 32116
KIT	P									310 32191
KIT	Q									310 10658
KIT	R									310 10659
KIT	S									310 10661
KIT	T									310 10662

*) optional

Um eine hohen Reparaturstandard zu gewährleisten sind mit Ausnahme von Kit T immer alle im Kit enthaltenen Teile zu tauschen.

In order to guarantee a high repairstandard all spare parts included in a kit have to be replaced with the exception of kit T.

Per una riparazione garantita ocorre sostituire tutti i pezzi contenuti nei kit, fatta eccetione per il kit T.

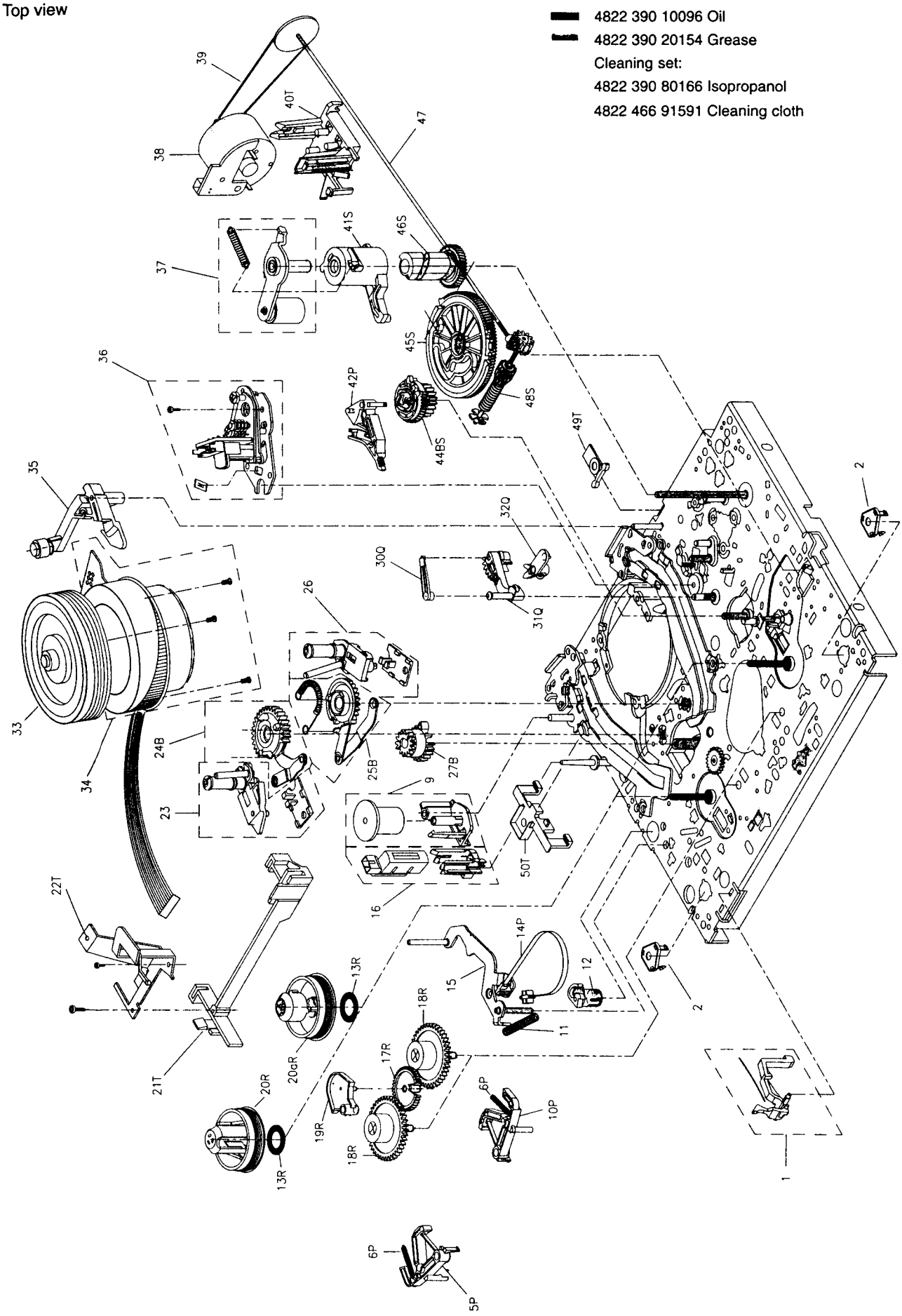
Para obtener un estandár de reparaciones elevadas es necesario cambiar todas las partes contenidas en el kit, la única exceptión es para el kit T.

A fin d'obtenir un standard de réparations élevé, toutes les pièces de rechange incluses dans un kit sont à remplacer, exception faite du kit T.

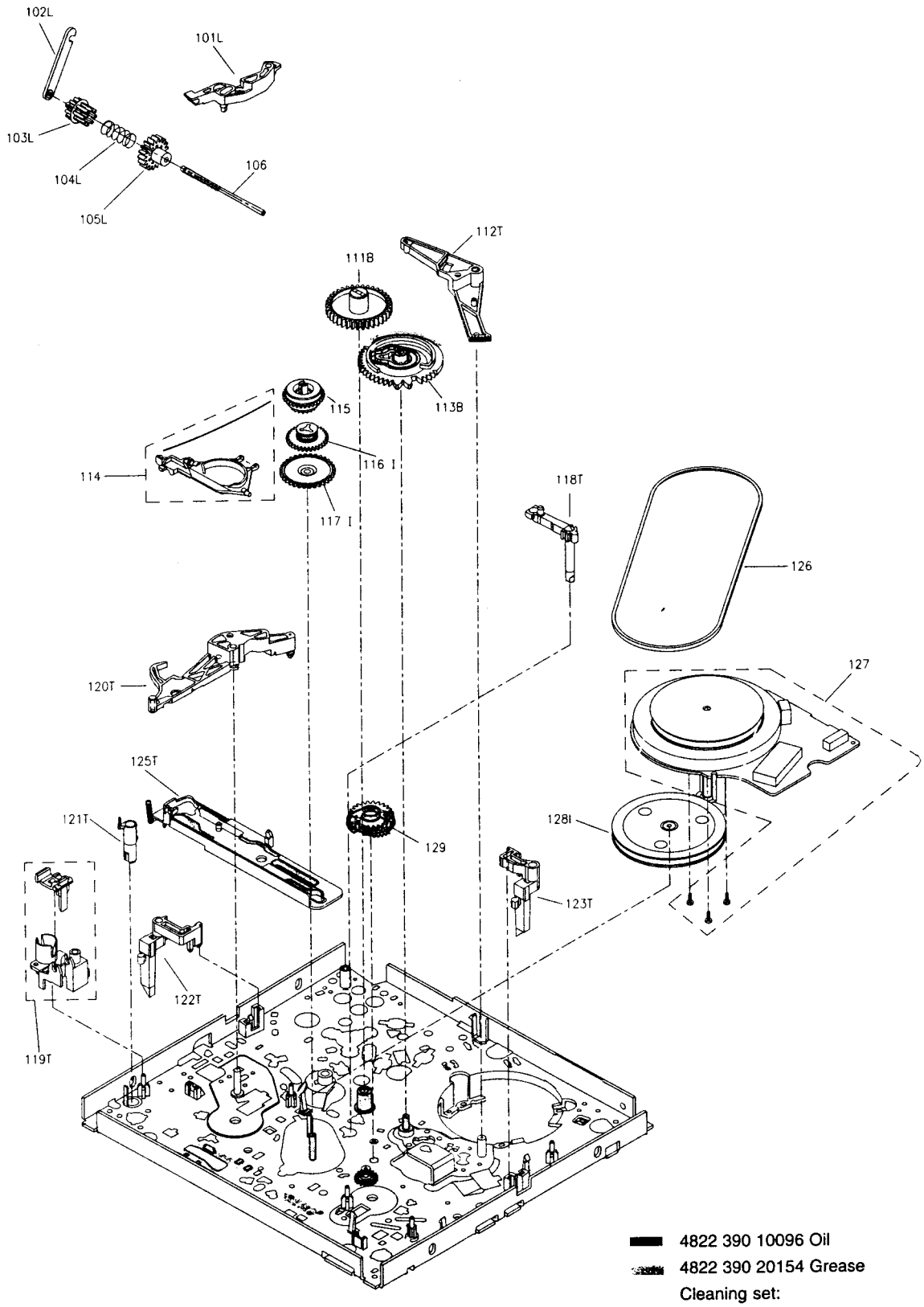
Om een hoge reparatiekwaliteit te waarbogen moeten, met uitzondering van kit T, altijd alle zich in een kit bevindende onderdelen worden vervangen.

4.2 Exploded view

Top view

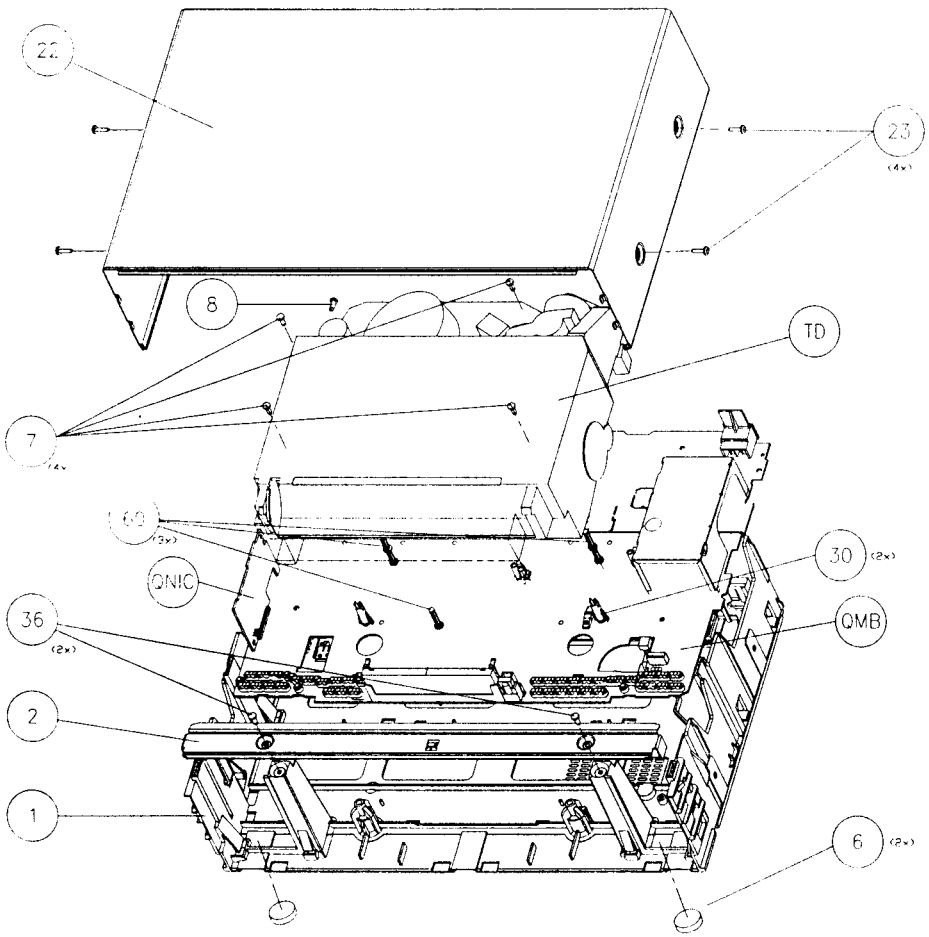


Underside view



4822 390 10096 Oil
4822 390 20154 Grease
Cleaning set:
4822 390 80166 Isopropanol
4822 466 91591 Cleaning cloth

Exploded view set



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Set Parts List

Pos	Service code	Description
1	4822 464 10286	FRAME ASSY 2SCART VR2xx, VR4xx, SB230
	4822 464 10285	FRAME ASSY CINCH VR6xx, SB630
2	4822 402 10709	BRACKET
6	4822 462 41806	FOOT FRAME
7	4822 502 13884	SCREW 3,5X16
8	4822 502 14431	SCREENING SCREW
22	4822 442 01844	COVER LACQUERED
23	4822 502 14109	SCREW 3,5X10
30	4822 256 10198	DISTANCEHOLDER DECK
36	4822 502 11838	SCREW P2,9X12
60	4822 256 10359	DISTANCE HOLDER MOBO

Directions for use

Direction for use	Service code
VR200/02 DE,EN	4822 736 16949
VR200/02 DK,FI,NO,SW	4822 736 16951
VR200/02 ES,PT	4822 736 16952
VR200/02 FR,NL,IT	4822 736 16953
VR200/02 GR	4822 736 16954
VR200/05 EN	4822 736 16955
VR200/07 EN	4822 736 16956
VR200/39 FR	4822 736 16957
VR200/58 EN,PL,RU,SK,TS,HU	4822 736 16958
VR205/02 DE	4822 736 16959
VR205/02 DK,FI,NO,SW	4822 736 16961
VR205/02 FR,NL,IT	4822 736 16962
VR205/02 ES,PT	4822 736 16963
VR205/05 EN	4822 736 16964
VR250/02 DE	4822 736 16965
VR250/02 DK,FI,NO,SW	4822 736 16966
VR250/02 FR,NL,IT	4822 736 16967
VR250/02 ES,PT	4822 736 16968
VR250/07 EN	4822 736 16969
VR250/39 FR	4822 736 16971
VR250/58 PL,RU,SK,TS,HU	4822 736 16972
VR400/02 DE	4822 736 16974
VR400/02 DK,FI,NO,SW	4822 736 16975
VR400/02 ES,PT	4822 736 16976
VR400/02 FR,NL,IT	4822 736 16977
VR400/02 GR	4822 736 16978
VR400/39 FR	4822 736 16979
VR400/58 EN,PL,RU,SK,TS,HU	4822 736 16981
VR450/02 FR,NL,IT,PT,ES	4822 736 16982
VR450/39 FR	4822 736 16983
VR450/58 PL,RU,SK,TS,HU	4822 736 16984
VR600/02 DE	4822 736 16985
VR600/02 FR,NL,IT	4822 736 16986
VR600/07 EN	4822 736 16987
VR600/13 DK,FI,NO,SW	4822 736 16989
VR600/13 GR	4822 736 16988
VR600/16 FR,NL,PT,ES	4822 736 16991
VR600/39 FR	4822 736 16992
VR605/02 DE	4822 736 16993
VR605/02 FR,NL,IT	4822 736 16994
VR605/07 EN	4822 736 16995
VR605/13 DK,FI,NO,SW	4822 736 16997
VR605/16 FR,NL,PT,ES	4822 736 16998
VR605/39 FR	4822 736 16999
VR605/58 EN,PL,RU,SK,TS,HU	4822 736 17001
SB230/02 DE	4822 736 16942
SB230/02 DK,FI,NO,SW	4822 736 16943
SB230/02 FR,NL,IT	4822 736 16944
SB230/02 ES,PT	4822 736 16945
SB630/02 DE,FR,NL,IT	4822 736 16946
SB630/13 DK,FI,NO,SW	4822 736 16947
SB630/16 FR,NL,PT,ES	4822 736 16948

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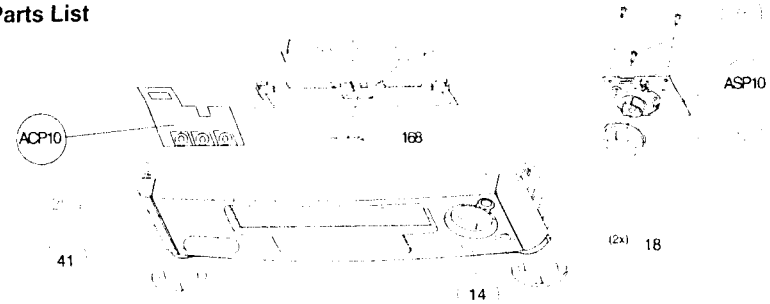
Front Parts List



Pos	Service code	Description
14	4822 454 13469	WORDMARK TURBO DRIVE
18	4822 462 11184	FOOT PANEL
20	4822 426 10864	CONTROL PANEL VR200/02
	4822 426 10865	CONTROL PANEL VR200/05, VR200/07
	4822 426 10866	CONTROL PANEL VR200/39
	4822 426 10867	CONTROL PANEL VR200/58
	4822 426 10868	CONTROL PANEL VR205/02
	4822 426 10869	CONTROL PANEL VR205/05
	4822 426 10871	CONTROL PANEL VR250/02, VR250/58
	4822 426 10872	CONTROL PANEL VR250/07
	4822 426 10873	CONTROL PANEL VR250/39
	4822 426 10874	CONTROL PANEL VR400/02, VR400/58
	4822 426 10875	CONTROL PANEL VR400/39
	4822 426 10876	CONTROL PANEL VR450/02, VR450/58
	4822 426 10877	CONTROL PANEL VR450/39
	4822 426 10878	CONTROL PANEL VR600/02
	4822 426 10879	CONTROL PANEL VR600/07
	4822 426 10881	CONTROL PANEL VR600/13, VR600/16
	4822 426 10882	CONTROL PANEL VR600/39
	4822 426 10883	CONTROL PANEL VR605/02
	4822 426 10884	CONTROL PANEL VR605/07
	4822 426 10885	CONTROL PANEL VR605/13, VR605/16, VR605/58
	4824 426 10886	CONTROL PANEL VR605/39
	4826 426 10861	CONTROL PANEL SB230/02
	4827 426 10862	CONTROL PANEL SB630/02
	4828 426 10863	CONTROL PANEL SB630/13, SB630/16
20/6	4822 443 11223	LIFT FLAP VR200/02, VR200/05, VR200/07
	4824 443 11224	LIFT FLAP VR200/39
	4825 443 11225	LIFT FLAP VR200/58
	4826 443 11226	LIFT FLAP VR205/02, VR205/05
	4828 443 11227	LIFT FLAP VR250/02, VR250/07, VR250/58
	4830 443 11228	LIFT FLAP VR250/39
	4832 443 11229	LIFT FLAP VR400/02, VR400/58
	4833 443 11231	LIFT FLAP VR400/39
	4835 443 11232	LIFT FLAP VR450/02, VR450/58
	4836 443 11233	LIFT FLAP VR450/39
	4838 443 11234	LIFT FLAP VR600/02
	4839 443 11235	LIFT FLAP VR600/07, VR600/13, VR600/16
	4842 443 11236	LIFT FLAP VR600/39
	4843 443 11237	LIFT FLAP VR605/02
	4844 443 11238	LIFT FLAP VR605/07, VR605/13, VR605/16, VR605/39, VR605/58
	4849 443 11221	LIFT FLAP SB230/02
	4850 443 11222	LIFT FLAP SB630/02, SB630/13, SB630/16
20/7	4842 492 70896	LEG SPRING
32	4822 410 12459	SHUTTLE KNOB
35	4822 502 11839	SCREW 2,9X8
41	4822 442 01838	COVER CINCH FRONT VR250, VR450, SB630
	4822 442 01839	COVER CINCH FRONT VR250/39, VR450/39
	4822 442 01842	COVER CINCH FRONT VR600, VR605
	4822 442 01843	COVER CINCH FRONT VR600/39, VR605/39
168	4822 549 10886	WORDMARK PHILIPS

Motherboard PAL, SECAM, MONO, STEREO

CONNECTORS

1001⚠	4822 267 10577	MAINS PLUG
1710	4822 267 10957	CONN. 3p
1711	4822 267 41062	CONN. 6p
1750	4822 267 10955	CONN. 3p
1908	4822 267 10584	CONN. 1p
1909	4822 267 10583	CONN. 1p
1910	7822 267 10584	CONN. 1p
1911	4822 265 10938	CINCH 2p white
1912	4822 265 10939	CINCH 2p red
1915	4822 267 10364	CONN. 9p
1916	4822 267 41199	CONN. 5p
1917	4822 265 11422	SCART CONN. BLACK E1
1918	4822 264 10346	SCART CONN. BLACK E2
1930	4822 267 41062	CONN. 6p
1944	4822 265 30989	CONN. 3p
1945	4822 267 51261	CONN. 8p
1946	4822 267 10366	CONN. 8p
1961	4822 267 31512	CONN. 7p
1962	5322 268 90415	CONN. 2p

MISCELLANEOUS

0005	4822 256 10355	DISPLAY HOLDER
0007	4822 256 10195	HOLDER
0008	4822 256 10196	HOLDER
0020	4822 256 10197	HOLDER
0021	4822 256 10197	HOLDER
0022	4822 256 10197	HOLDER
1000	4822 242 81067	Crystal 4.433 619 MHz
1101	4822 276 13732	SWITCH TACT PUSH
1102	4822 276 13732	SWITCH TACT PUSH
1105	4822 276 13732	SWITCH TACT PUSH
1107	4822 276 13732	SWITCH TACT PUSH
1109	4822 276 13732	SWITCH TACT PUSH
1110	4822 276 13732	SWITCH TACT PUSH
1111	4822 276 13732	SWITCH TACT PUSH
1113	4822 276 13732	SWITCH TACT PUSH
1132	4822 276 13732	SWITCH TACT PUSH
1134	4822 276 13732	SWITCH TACT PUSH
1136	4822 276 13732	SWITCH TACT PUSH
1140	4822 276 13732	SWITCH TACT PUSH
1142	4822 276 13732	SWITCH TACT PUSH
1143	4822 276 13732	SWITCH TACT PUSH
1144	4822 276 13732	SWITCH TACT PUSH
1145	4822 276 13732	SWITCH TACT PUSH
1147	4822 276 13732	SWITCH TACT PUSH
1148	4822 276 13732	SWITCH TACT PUSH
1149	4822 276 13732	SWITCH TACT PUSH
1154	4822 276 13732	SWITCH TACT PUSH
1155	4822 276 13732	SWITCH TACT PUSH
1178	4822 276 13732	SWITCH TACT PUSH
1180	4822 276 13732	SWITCH TACT PUSH
1181	4822 276 13732	SWITCH TACT PUSH
1183	4822 276 13732	SWITCH TACT PUSH
1185	4822 276 13732	SWITCH TACT PUSH
1186	4822 276 13732	SWITCH TACT PUSH
1187	4822 276 13732	SWITCH TACT PUSH
1190	4822 276 13732	SWITCH TACT PUSH
1192	4822 276 13732	SWITCH TACT PUSH
1193	4822 276 13732	SWITCH TACT PUSH
1220	4822 276 13732	SWITCH TACT PUSH
1224	4822 276 13732	SWITCH TACT PUSH
1226	4822 276 13732	SWITCH TACT PUSH
1227	4822 276 13732	SWITCH TACT PUSH
1228	4822 276 13732	SWITCH TACT PUSH
1229	4822 276 13732	SWITCH TACT PUSH
1230	4822 276 13732	SWITCH TACT PUSH
1231	4822 276 13732	SWITCH TACT PUSH
1232	4822 276 13732	SWITCH TACT PUSH
1233	4822 276 13732	SWITCH TACT PUSH
1234	4822 276 13732	SWITCH TACT PUSH
1235	4822 276 13732	SWITCH TACT PUSH
1236	4822 276 13732	SWITCH TACT PUSH
1242	4822 276 13732	SWITCH TACT PUSH
1297	5322 242 73682	Crystal 32.768 KHZ
1298	4822 242 82114	Crystal 8.00 MHZ
1350⚠	4822 071 51001	Fuse 100 mA
1351⚠	4822 071 55001	Fuse 500 mA
1352⚠	4822 071 55001	Fuse 500 mA
1353⚠	4822 070 31252	Fuse 1.25 A
1355⚠	4822 071 51002	Fuse 1.0 A
1356⚠	4822 071 51002	Fuse 1.0 A
1400	4822 242 82059	Crystal 10 MHZ
1460	4822 277 11521	Switch
1461	4822 277 11521	Switch
1701	4822 210 10786	TP916MK2 PAL BG (TMRG1-108A compatible)
1701	4822 210 10787	TMRG1-110A PAL I (FULLBAND) (TP944MK2, TMRB1102A comp.)
1701	4822 210 10784	TMRG1-203A PAL GK
1701	4822 210 10785	TP926MK2 Booster SECAM (TMRG2-104A compatible)
1719	4822 242 10688	OFWK9456M SEC-LL'
1719	4822 242 10306	OFWK9463M SEC-DK/K'-NIC
1720	4822 242 81964	G1984 FM stereo PAL-G
1720	4822 242 81737	G1965 mono SEC
1720	4822 242 10307	OFWG3956M SEC-DK/K'-NIC
1720	4822 242 81436	OFWK3953M stereo SEC
1721	4822 242 81388	OFWG1961M mono PAL-G
1721	4822 242 81261	OFWG1966M mono SEC-DK
1721	4822 242 72197	OFWK2950M SEC-K'
1721	4822 242 10575	OFWJ1980M PAL-I
1721	4822 242 81964	G1984 stereo PAL-G
1722	4822 242 10318	OFWL9360M mono SEC-DK
1740	4822 242 72586	TPS 5,5MB-TF20 PAL-G
1740	4822 242 81572	TPS 6,0MB-TF21 PAL-I
1740	4822 242 81301	TPS 6,5MB-TF21 SEC-K'
1745	4822 242 70279	SFE 6,0MB SEC-L, PAL-I
1745	4822 242 10428	EFCT5R5YS5A PAL-G
1745	4822 242 10429	EFCT6R5YS5A SEC-DK
1746	4822 242 10428	EFCT5R5YS5A
1746	4822 242 10429	EFCT6R5YS5A SEC-DK/K'-NIC
1747	4822 242 10563	EFCT5R74YS5A stereo FM
1748	4822 242 10754	EFCT6R25YS5A stereo DK
1781	4822 242 82059	Crystal 10 MHZ

CAPACITORS

2001	4822 126 10002	100nF20%Y5V	25V
2002	4822 122 33177	10nF 20% X7R	50V
2003	4822 126 10002	100nF20%Y5V	25V
2004	4822 122 33177	10nF 20% X7R	50V
2005	4822 124 23055	22µF20%	16V
2006	4822 126 13222	390pF 2% np0	63V
2007	5322 122 32966	39pF 5%np0	50V
2008	5322 122 32658	22pF 5%	50V
2009	4822 126 10002	100nF20%Y5V	25V
2010	4822 124 80987	220µF20%	6.3V
2011	4822 122 33177	10nF 20% X7R	50V
2012	4822 124 11569	4,7µF 20%	25V
2013	4822 126 10002	100nF20%Y5V	25V
2014	4822 124 80975	0,47µF20%	50V
2015	4822 126 10002	100nF20%Y5V	25V
2016	4822 126 10002	100nF20%Y5V	25V
2017	4822 124 22826	10µF	16V
2018	5322 122 32658	22pF 5%	50V
2019	4822 124 22826	10µF	16V
2020	4822 124 22826	10µF	16V
2021	4822 124 22826	10µF	16V
2022	4822 126 10002	100nF20%Y5V	25V
2023	4822 122 33177	10nF 20% X7R	50V
2024	4822 126 10002	100nF20%Y5V	25V
2025	4822 124 11568	47µF 20%	16V
2026	4822 122 33575	220pF 5%	50V
2027	4822 122 33177	10nF 20% X7R	50V

⚠ .. Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

2028	4822 122 33177	10nF 20% X7R	50V
2029	4822 122 33177	10nF 20% X7R	50V
2030	4822 122 33177	10nF 20% X7R	50V
2031	4822 126 10002	100nF20%Y5V	25V
2032	4822 124 11568	47µF 20%	16V
2033	4822 126 10002	100nF20%Y5V	25V
2034	4822 122 33177	10nF 20% X7R	50V
2035	4822 122 33177	10nF 20% X7R	50V
2036	4822 122 33515	82pF 5%	63V
2037	4822 126 14124	220pF 2%	50V
2038	5322 126 13691	27pF 5%	63V for 2 heads
2038	5322 122 32659	33pF 5%	50V for 4 heads
2039	4822 124 23053	1µF20%	63V
2040	5322 122 32654	22nF10%X7R	63V
2041	4822 124 23053	1µF20%	63V
2042	4822 122 33797	47nF20%Y5V	50V
2043	4822 124 41969	1µF20%	50V
2044	4822 124 23053	1µF20%	63V
2045	4822 126 13196	100nF10%X7R	50V
2046	5322 122 34123	1nF10%X7R	50V
2048	5322 122 31873	2.7pF0.5%	100V
2047	4822 122 33177	10nF 20% X7R	50V
2049	4822 124 11568	47µF 20%	16V
2054	4822 124 41969	1µF20%	50V
2055	4822 122 33177	10nF 20% X7R	50V
2059	4822 124 23053	1µF20%	63V
2064	5322 122 31946	27pF 5%	63V
2066	4822 122 33177	10nF 20% X7R	50V
2080	5322 122 32658	22pF 5%	50V
2081	4822 122 33177	10nF 20% X7R	50V
2082	4822 122 33177	10nF 20% X7R	50V
2083	4822 122 33177	10nF 20% X7R	50V
2084	4822 122 33177	10nF 20% X7R	50V
2085	4822 126 10002	100nF20%Y5V	25V
2086	4822 124 11568	47µF 20%	16V
2087	4822 122 33177	10nF 20% X7R	50V
2100	4822 122 33177	10nF 20% X7R	50V
2101	5322 122 32531	100pF 5%	50V
2102	5322 122 32658	22pF 5%	50V
2103	5322 122 34123	1nF10%X7R	50V
2104	4822 122 33177	10nF 20% X7R	50V
2105	4822 122 33177	10nF 20% X7R	50V
2106	4822 122 33177	10nF 20% X7R	50V
2107	4822 122 33177	10nF 20% X7R	50V
2108	5322 122 33538	150pF 2%	63V
2109	5322 122 32481	15pF 5%	50V
2110	4822 126 10002	100nF20%Y5V	25V
2111	4822 126 13694	68pF 1%	63V
2112	4822 122 33177	10nF 20% X7R	50V
2113	4822 126 10002	100nF20%Y5V	25V
2115	4822 122 33575	220pF 5%	50V
2116	4822 122 33177	10nF 20% X7R	50V
2117	5322 122 34123	1nF10%X7R	50V
2118	5322 122 32659	33pF 5%	50V
2119	5322 122 32531	100pF 5%	50V for mstd /39
2119	4822 122 33797	47nF 20%	50V
2121	5322 122 34123	1nF10%X7R	50V
2122	4822 122 33177	10nF 20% X7R	50V
2123	4822 126 10002	100nF20%Y5V	25V
2124	4822 126 10002	100nF20%Y5V	25V
2125	4822 122 33515	82pF 5%	63V
2126	5322 122 31946	27pF 5%	63V
2128	4822 122 33515	82pF 5%	63V
2129	4822 122 33515	82pF 5%	63V
2130	4822 122 33575	220pF 5%	50V
2132	5322 122 32269	6.8pF 5%	50V
2133	5322 122 32452	47pF 5%	63V
2134	4822 122 33575	220pF 5%	50V
2135	5322 122 31946	27pF 5%	63V
2137	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2138	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2150	4822 122 33177	10nF 20% X7R	50V
2151	4822 126 13061	220nF20% Y5V	25V
2152	4822 124 11568	47µF 20%	16V
2153	5322 122 32654	22nF 10% X7R	63V
2154	4822 122 33177	10nF 20% X7R	50V
2155	4822 122 33177	10nF 20% X7R	50V
2156	4822 122 33177	10nF 20% X7R	50V
2157	4822 122 33177	10nF 20% X7R	50V
2158	4822 122 33177	10nF 20% X7R	50V
2159	4822 122 33177	10nF 20% X7R	50V
2160	4822 122 33177	10nF 20% X7R	50V
2161	4822 122 33177	10nF 20% X7R	50V
2162	5322 122 32268	470pF 10%	50V
2163	5322 122 32531	100pF 5%	50V
2203	5322 122 32481	15pF 5%	50V
2204	5322 122 32481	15pF 5%	50V
2210	4822 122 33177	10nF 20% X7R	50V
2211	4822 124 81112	220µF20%	10V
2212	4822 126 13061	220nF20% Y5V	25V
2220	4822 124 23055	22µF20%	16V
2230	4822 122 33177	10nF 20% X7R	50V
2231	4822 122 33797	47nF20%Y5V	50V
2232	4822 122 33177	10nF 20% X7R	50V
2233	4822 122 33177	10nF 20% X7R	50V
2251	4822 126 10002	100nF20%Y5V	25V
2252	4822 126 10002	100nF20%Y5V	25V
2297	4822 124 11968	220mF +80-20%	5,5V
2300	4822 124 80407	1µF20%	50V
2301	4822 124 80407	1µF20%	50V
2302	4822 124 80407	1µF20%	50V
2308	5322 122 32531	100pF 5%	50V
2310	4822 126 10002	100nF20%Y5V	25V
2311	4822 122 33177	10nF 20% X7R	50V
2313	4822 122 33575	220pF 5%	50V
2314	4822 126 10002	100nF20%Y5V	25V
2315	4822 122 33177	10nF 20% X7R	50V
2316	4822 122 33797	47nF20%Y5V	50V
2317	5322 122 32654	22nF10%X7R	63V
2318	4822 124 22263	220µF20%	25V
2319	5322 122 32654	22nF10%X7R	63V
2320	5322 122 32654	22nF10%X7R	63V
2350	4822 126 14125	470pF 2%	50V
2353	4822 126 13196	100nF10% X7R	25V
2354	4822 126 10002	100nF20%Y5V	25V
2355	5322 122 34123	1nF10%X7R	50V
2356	4822 124 23053	1µF20%	63V
2357▲	4822 126 13841	1nF 20%	250V
2358	4822 126 10002	100nF20%Y5V	25V
2359	4822 126 13061	220nF20% Y5V	25V
2360▲	4822 121 10667	68nF 20%	275V
2361	4822 124 22864	47µF	50V
2362▲	4822 124 11969	22µF 20%	400V
2363	4822 124 22864	47µF	50V
2364	4822 124 11899	220µF 20%	25V
2365	4822 124 11971	470µF 20%	16V
2366	4822 126 14126	47pF 5%	2KV
2367	4822 124 11899	220µF 20%	25V
2368	4822 122 31175	1nF 10%	500V
2369	4822 126 10002	100nF20%Y5V	25V
2370	4822 124 23052	100µF20%	16V
2371	4822 124 11971	470µF 20%	16V
2372	4822 126 13061	220nF20% Y5V	25V
2373	4822 124 11486	220µF 20%	16V
2374	4822 124 11971	470µF 20%	16V
2375	4822 121 42004	10nF 10%	400V
2376	4822 124 22833	10µF	50V
2378	4822 121 42004	10nF 10%	400V
2379	5322 126 10223	4,7nF10%X7R	63V
2385	4822 124 11486	220µF 20%	16V
2386	5322 122 32268	470pF 10%	50V
2400	4822 122 33177	10nF 20% X7R	50V
2401	4822 124 23055	22µF20%	16V
2403	5322 122 32658	22pF 5%	50V
2404	5322 122 32658	22pF 5%	50V
2416	4822 126 10002	100nF20%Y5V	25V
2417	4822 124 81295	47µF20%	6,3V
2440	4822 124 81029	100µF20%	25V
2441	4822 126 10002	100nF20%Y5V	25V
2442	4822 122 33177	10nF 20% X7R	50V

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Motherboard PAL, SECAM, MONO, STEREO

2455	4822 122 33175	2,2nF 20% X7R	50V	
2459	4822 124 22263	220µF20%	25V	
2461	5322 126 10223	4,7nF10%X7R	63V	
2463	4822 124 23027	47µF	6.3V	
2464	5322 126 10223	4,7nF10%X7R	63V	
2465	4822 122 33175	2,2nF 20% X7R	50V	
2466	4822 124 23027	47µF	6.3V	
2467	4822 122 33342	33nF10%X7R	63V	
2468	4822 126 10002	100nF20%Y5V	25V	
2470	4822 122 33177	10nF 20% X7R	50V	
2471	4822 122 33177	10nF 20% X7R	50V	
2472	5322 122 32531	100pF 5%	50V	
2473	5322 122 32531	100pF 5%	50V	
2474	5322 122 32531	100pF 5%	50V	
2501	4822 126 10002	100nF20%Y5V	25V	
2502	4822 124 22826	10µF	16V	
2503	4822 124 22826	10µF	16V	
2504	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2504	5322 122 32268	470pF 10%	50V	for mono
2505	5322 122 32268	470pF 10%	50V	for mono
2505	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2506	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2506	5322 122 32268	470pF 10%	50V	for mono
2507	4822 116 10056	VDR 0805 1MA/ 8VMAX		
2508	4822 126 10002	100nF20%Y5V	25V	
2509	5322 122 32268	470pF 10%	50V	for mono
2509	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2510	5322 122 32268	470pF 10%	50V	for mono
2510	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2511	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2511	5322 122 32268	470pF 10%	50V	for mono
2512	4822 116 10056	VDR 0805 1MA/ 8VMAX		
2514	4822 124 80483	47µF	6.3V	
2515	4822 126 10002	100nF20%Y5V	25V	
2516	4822 124 11568	47µF 20%	16V	
2517	4822 126 10002	100nF20%Y5V	25V	
2519	4822 126 10002	100nF20%Y5V	25V	
2520	4822 126 10002	100nF20%Y5V	25V	
2521	4822 126 10002	100nF20%Y5V	25V	
2523	4822 126 10002	100nF20%Y5V	25V	
2524	4822 126 10002	100nF20%Y5V	25V	
2525	4822 126 10002	100nF20%Y5V	25V	
2526	4822 126 10002	100nF20%Y5V	25V	
2527	4822 126 10002	100nF20%Y5V	25V	
2530	4822 126 13061	220nF20% Y5V	25V	
2540	4822 126 10002	100nF20%Y5V	25V	
2541	4822 122 33175	2,2nF 20% X7R	50V	
2542	4822 122 33342	33nF10%X7R	63V	
2543	4822 126 13482	470nF80/20%	16V	
2545	4822 126 10002	100nF20%Y5V	25V	
2600	5322 126 10184	680p 5%	50V	
2601	4822 122 33175	2,2nF 20% X7R	50V	
2602	4822 124 22826	10µF	16V	
2603	4822 122 33177	10nF 20% X7R	50V	
2604	4822 124 22739	100µF	50V	for mono
2604	4822 124 22826	10µF	16V	for stereo
2605	5322 122 34123	1nF10%X7R	50V	
2606	4822 126 10002	100nF20%Y5V	25V	
2608	4822 122 33177	10nF 20% X7R	50V	
2617	4822 124 11568	47µF 20%	16V	
2618	5322 122 31863	330pF 5%	50V	
2619	4822 124 11568	47µF 20%	16V	
2620	4822 121 51655	47nF	50V	
2621	5322 122 34123	1nF10%X7R	50V	
2622	4822 121 43873	27nF 5%	50V	
2646	4822 126 13482	470nF80/20%	16V	
2647	4822 126 10002	100nF20%Y5V	25V	
2648	4822 124 23055	22µF20%	16V	
2650	4822 126 10002	100nF20%Y5V	25V	
2651	4822 124 11568	47µF 20%	16V	
2652	4822 124 22826	10µF	16V	
2656	4822 126 14127	39nF 10%	50V	
2657	4822 122 33128	15nF10%X7R	63V	
2700	4822 126 10002	100nF20%Y5V	25V	
2701	4822 126 10002	100nF20%Y5V	25V	
2702	4822 126 10002	100nF20%Y5V	25V	
2704	4822 124 23052	100µF20%	16V	
2705	5322 122 32268	470pF 10%	50V	
2706	4822 122 33575	220pF 5%	50V	
2707	5322 122 33861	120pF10%	50V	
2708	4822 124 23055	22µF20%	16V	
2709	4822 126 10002	100nF20%Y5V	25V	
2715	5322 122 32661	56pF 5%	50V	
2716	5322 122 32661	56pF 5%	50V	
2722	5322 122 34123	1nF10%X7R	50V	
2723	4822 122 33177	10nF 20% X7R	50V	
2726	4822 126 12104	12nF 5%X7R	63V	
2726	4822 122 32654	22nF 10% X7R	63V	for SEC-K'
2727	4822 124 23055	22µF20%	16V	
2728	4822 124 23055	22µF20%	16V	
2729	4822 122 33177	10nF 20% X7R	50V	
2730	5322 122 32452	47pF 5%	63V	
2731	5322 122 32452	47pF 5%	63V	
2732	5322 122 32452	47pF 5%	63V	
2733	4822 122 33177	10nF 20% X7R	50V	
2734	4822 126 10002	100nF20%Y5V	25V	
2735	5322 122 32452	47pF 5%	63V	
2740	4822 124 41576	2.2µF 20%	50V	
2741	4822 126 10002	100nF20%Y5V	25V	
2742	4822 124 23055	22µF20%	16V	
2743	4822 126 13061	220nF20% Y5V	25V	
2744	4822 124 40786	2,2µF20%	63V	
2745	4822 122 33575	220pF 5%	50V	
2746	4822 126 10002	100nF20%Y5V	25V	
2747	4822 126 10002	100nF20%Y5V	25V	
2748	4822 126 14319	8,2pF 2%	50V	
2749	4822 126 13061	220nF20% Y5V	25V	
2750	4822 124 40786	2,2µF20%	63V	
2752	4822 126 13061	220nF20% Y5V	25V	
2780	4822 124 22826	10µF	16V	
2781	4822 122 33177	10nF 20% X7R	50V	
2782	4822 126 10002	100nF20%Y5V	25V	
2783	5322 126 10184	680p 5%	50V	
2784	4822 124 80231	47µF 20%	16V	
2785	5322 122 32531	100pF 5%	50V	
2786	4822 124 11569	4,7µF 20%	25V	
2787	4822 124 11569	4,7µF 20%	25V	
2788	5322 122 32654	22nF10% X7R	63V	
2789	4822 122 33177	10nF 20% X7R	50V	
2790	4822 122 33177	10nF 20% X7R	50V	
2791	4822 124 11569	4,7µF 20%	25V	
2792	4822 124 11569	4,7µF 20%	25V	
2793	5322 122 32481	15pF 5%	50V	
2794	4822 126 10002	100nF20%Y5V	25V	
2795	5322 122 34123	1nF10%X7R	50V	
2796	4822 124 11569	4,7µF 20%	25V	
2800	4822 126 13689	18pF 1%	63V	
2801	5322 122 32659	33pF 5%	50V	
2802	4822 126 14118	100nF -20+80%	50V	
2802	4822 126 10002	100nF20%Y5V	25V	
2803	4822 126 10002	100nF20%Y5V	25V	
2804	4822 124 23053	1µF20%	63V	
2805	4822 124 23027	47µF	6.3V	
2810	5322 122 33861	120pF10%	50V	
2811	5322 122 32531	100pF 5%	50V	
2829	4822 122 33177	10nF 20% X7R	50V	
2831	5322 122 32481	15pF 5%	50V	
2850	4822 124 23052	100µF20%	16V	
2851	5322 122 32654	22nF10% X7R	63V	
2852	4822 124 23052	100µF20%	16V	
2853	5322 122 32654	22nF10% X7R	63V	
2854	4822 124 40786	2,2µF20%	63V	
2855	5322 122 32654	22nF10% X7R	63V	
2856	5322 122 32654	22nF10% X7R	63V	
2857	4822 126 13061	220nF20% Y5V	25V	
2858	4822 126 13061	220nF20% Y5V	25V	
2859	4822 126 13061	220nF20% Y5V	25V	
2860	4822 126 13061	220nF20% Y5V	25V	
2861	4822 126 13061	220nF20% Y5V	25V	
2862	4822 126 13061	220nF20% Y5V	25V	

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2863	4822 126 13061	220nF20% Y5V	25V
2864	4822 126 13061	220nF20% Y5V	25V
2865	5322 126 10223	4,7nF10%X7R	63V
2866	4822 124 11568	47µF 20%	16V
2867	4822 124 22826	10µF	16V
2868	4822 126 13061	220nF20% Y5V	25V
2869	5322 126 10223	4,7nF10%X7R	63V
2870	4822 124 11568	47µF 20%	16V
2871	4822 124 22826	10µF	16V
2872	4822 124 22826	10µF	16V
2873	4822 124 22826	10µF	16V
2874	4822 124 22826	10µF	16V
2875	4822 124 22826	10µF	16V
2876	4822 124 22826	10µF	16V
2877	4822 124 22826	10µF	16V
2880	4822 124 22826	10µF	16V
2881	4822 124 22826	10µF	16V
2882	5322 126 10223	4,7nF10%X7R	63V
2883	5322 116 80853	560pF 5%	63V
2884	5322 126 10223	4,7nF10%X7R	63V
2885	5322 116 80853	560pF 5%	63V
2888	4822 124 22826	10µF	16V
2889	4822 126 10002	100nF20%Y5V	25V

RESISTORS

3000	4822 051 10102	1K00	2%	0,25W	
3001	4822 051 10102	1K00	2%	0,25W	
3002	4822 116 52228	680E	5%	0,5W	
3003	4822 116 52228	680E	5%	0,5W	
3004	4822 116 52228	680E	5%	0,5W	
3005	4822 116 52303	8K2	5%	0,5W	
3006	4822 116 52238	12K	5%	0,5W	
3007	4822 100 12157	10K	30%	POT	
3008	4822 116 83883	470E	5%	0,5W	
3010	4822 051 10102	1K00	2%	0,25W	
3011	4822 117 11449	2K2	1%	0,1W	
3012	4822 117 11449	2K2	1%	0,1W	
3013	4822 117 11721	1K3	2%	0.1W	
3014	4822 116 83903	4K7	2%	0.1W	
3015	4822 051 10102	1K00	2%	0,25W	
3016	4822 051 20822	8K20	5%	0,1W	
3017	4822 116 52249	1K8	5%	0,5W	
3018	4822 116 83883	470E	5%	0,5W	
3019	4822 051 20562	5K60	5%	0,1W	
3020	4822 051 20224	220K0	5%	0,1W	
3021	4822 050 11002	1K00	1%	0,4W	
3022	4822 050 11002	1K00	1%	0,4W	
3024	4822 051 20822	8K20	1%	0,1W	
3024	4822 051 20682	6K80	5%	0,1W	for 2/x
3027	4822 116 52264	27K	5%	0,5W	
3028	4822 051 20562	5K60	5%	0,1W	for 1 scart
3028	4822 051 20332	3K30	5%	0,1W	for 2 scart
3029	4822 051 20225	2M20	5%	0,1W	
3030	4822 116 52256	2K2	5%	0,5W	
3031	4822 116 52256	2K2	5%	0,5W	
3032	4822 117 11449	2K2	1%	0,1W	
3033	4822 117 10965	18K	5%	0,5W	
3034	4822 051 20153	15K00	5%	0,1W	
3035	4822 117 11449	2K2	1%	0,1W	
3036	4822 051 20471	470R0	5%	0,1W	
3045	4822 116 83876	270E	5%	0,5W	
3046	4822 050 11002	1K00	1%	0,4W	
3048	4822 116 83884	47K	5%	0,5W	
3050	4822 116 83872	220R	5%	0,5W	for mstd
3050	4822 116 52175	100E	5%	0,5W	
3051	4822 051 20224	220K0	5%	0,1W	
3052	4822 116 52175	100E	5%	0,5W	
3054	4822 117 11449	2K2	1%	0,1W	
3055	4822 117 10361	680R	1%	0,1W	
3080	4822 051 20568	5R60	5%	0,1W	
3081	4822 051 20561	560R0	5%	0,1W	
3082	4822 051 20471	470R0	5%	0,1W	
3083	4822 051 20472	4K70	5%	0,1W	
3084	4822 051 20472	4K70	5%	0,1W	
3085	4822 051 20112	1K10	5%	0,1W	
3086	4822 051 20331	330R0	5%	0,1W	
3087	4822 116 52234	100K	5%	0,5W	
3089	4822 051 20561	560R0	5%	0,1W	
3100	4822 116 52219	330E	5%	0,5W	
3101	4822 051 20332	3K30	5%	0,1W	
3102	4822 116 52231	820E	5%	0,5W	
3103	4822 116 52228	680E	5%	0,5W	
3104	4822 050 11002	1K00	1%	0,4W	
3105	4822 116 52222	390E	5%	0,5W	
3106	4822 116 52226	560E	5%	0,5W	
3107	4822 050 11002	1K00	1%	0,4W	
3109	4822 116 52195	47E	5%	0,5W	
3110	4822 116 52207	1K2	5%	0,5W	
3111	4822 116 52256	2K2	5%	0,5W	
3112	4822 051 10102	1K00	2%	0,25W	
3113	4822 051 20561	560R0	5%	0,1W	
3114	4822 117 10833	10K	1%	0,1W	
3115	4822 116 52251	18K	5%	0,5W	
3116	4822 051 10102	1K00	2%	0,25W	
3117	4822 116 52256	2K2	5%	0,5W	
3118	4822 116 52283	4K7	5%	0,5W	
3119	4822 116 52271	33K	5%	0,5W	
3120	4822 116 52303	8K20	5%	0,5W	
3121	4822 051 20182	1K80	5%	0,1W	
3122	4822 051 10102	1K00	2%	0,25W	
3123	4822 116 83864	10K	5%	0,5W	
3124	4822 116 52243	1K5	5%	0,5W	
3125	4822 117 11449	2K2	1%	0,1W	
3126	4822 051 10102	1K00	2%	0,25W	
3127	4822 117 11449	2K2	1%	0,1W	
3128	4822 117 11449	2K2	1%	0,1W	
3129	4822 051 10102	1K00	2%	0,25W	
3134	4822 117 11503	220R	1%	0.1W	
3135	4822 117 11503	220R	1%	0.1W	
3151	4822 051 20104	100K00	5%	0,1W	
3152	4822 051 20393	39K00	5%	0,1W	
3153	4822 117 10833	10K	1%	0,1W	
3154	4822 117 12605	27K	1%	0,1W	for 4/2
3154	4822 117 10354	22K	1%	0,1W	for 4/0
3154	4822 117 12141	14K	1%	0,1W	for 3/0
3154	4822 117 12342	18K	1%	0,1W	for 2/x
3155	4822 117 11383	12K	1%	0,1W	for 2/x
3155	4822 051 20153	15K00	5%	0,1W	for 4/x
3156	4822 051 20331	330R00	5%	0,1W	
3157	4822 051 20331	330R00	5%	0,1W	
3158	4822 051 20472	4K70	5%	0,1W	
3159	4822 100 12157	10K	30%	POT	
3160	4822 100 12157	10K	30%	POT	
3162	4822 051 20008	0R00 JUMP (0805)			
3163	4822 051 20008	0R00 JUMP (0805)			
3164	4822 051 20008	0R00 JUMP (0805)			
3165	4822 051 20008	0R00 JUMP (0805)			
3228	4822 116 83872	220E	5%	0,5W	
3229	4822 117 10833	10K	1%	0,1W	
3230	4822 117 10833	10K	1%	0,1W	
3231	4822 116 52175	100E	5%	0,5W	
3232	4822 051 20101	100E	5%	0,5W	
3233	4822 116 83864	10K	5%	0,5W	
3234	4822 116 83864	10K	5%	0,5W	
3235	4822 116 83864	10K	5%	0,5W	
3238	4822 116 83864	10K	5%	0,5W	
3240	4822 116 52297	68K	5%	0,5W	
3241	4822 051 20683	68K00	5%	0,1W	
3242	4822 051 20683	68K00	5%	0,1W	
3243	4822 051 20683	68K00	5%	0,1W	
3244	4822 050 11002	1K00	1%	0,4W	
3245	4822 051 20183	18K00	5%	0,1W	
3250	4822 051 20153	15K00	5%	0,1W	
3252▲	4822 117 11593	22E	5%		
3253	4822 050 24708	4R70	1%	0,6W	
3254	4822 050 24708	4R70	1%	0,6W	
3265	4822 116 83864	10K	5%	0,5W	
3270	4822 117 11503	220R	1%	0.1W	

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3271	4822 117 11503	220R	1%	0.1W	
3273	4822 117 11503	220R	1%	0.1W	
3297	4822 051 20562	5K60	5%	0,1W	
3300	4822 116 52175	100E	5%	0,5W	
3301	4822 116 52175	100E	5%	0,5W	
3302	4822 116 52175	100E	5%	0,5W	
3303	4822 116 83883	470E	5%	0,5W	
3304	4822 050 11002	1K00	1%	0,4W	
3305	4822 116 52283	4K7	5%	0,5W	
3312	4822 116 52249	1K8	5%	0,5W	
3313	4822 116 83884	47K	5%	0,5W	
3350	4822 117 10833	10K	1%	0,1W	
3351	4822 051 20223	22K00	5%	0,1W	
3352	4822 051 20562	5K60	5%	0,1W	
3353	4822 117 10833	10K	1%	0,1W	
3354	4822 117 11449	2K2	1%	0,1W	
3355	4822 051 20822	8K20	5%	0,1W	
3356	4822 051 20223	22K00	5%	0,1W	
3357	4822 051 20472	4K70	5%	0,1W	
3358	4822 117 11149	82K	1%	0,1W	
3359	4822 051 20471	470R00	5%	0,1W	
3360	4822 051 20689	68R00	5%	0,1W	
3361▲	4822 052 10479	47R00	5%	0,33W	
3362	4822 051 20472	4K70	5%	0,1W	
3363	4822 050 21208	1R20	1%	0,6W	
3365	4822 116 83874	220K	5%	0,5W	
3369	4822 116 83882	39K	5%	0,5W	
3370	4822 116 83882	39K	5%	0,5W	
3374	4822 051 20271	270R00	5%	0,1W	
3375	4822 051 10102	1K00	2%	0,25W	
3376	4822 051 20008	0R00 JUMP (0805)			
3377	4822 051 20472	4K70	5%	0,1W	
3378	4822 051 20272	2K70	5%	0,1W	
3379	4822 101 11383	470E		POT	
3380	4822 051 10102	1K00	2%	0,25W	
3381	4822 051 20104	100K	5%	0,1W	
3382	4822 051 20104	100K	5%	0,1W	
3383	4822 116 83874	220K	5%	0,5W	
3384▲	4822 052 10101	100R00	5%	0,33W	
3385	4822 116 52269	3K30	1%	0,4W	
3386	4822 116 52219	330R00	1%	0,4W	
3387	4822 116 52226	560R00	5%	0,5W	
3387	4822 116 83883	470R00	5%	0,5W	for stereo
3388	4822 116 52226	560R00	5%	0,5W	
3388	4822 116 83883	470R00	5%	0,5W	for stereo
3389	4822 117 11449	2K2	1%	0,1W	
3390	4822 051 20224	220K00	5%	0,1W	
3391	4822 051 20224	220K00	5%	0,1W	
3392▲	4822 053 21335	3M30	5%	0,5W	
3393▲	4822 053 21335	3M30	5%	0,5W	
3394	4822 116 52256	2K2	5%	0,5W	
3395	4822 116 52257	22K	5%	0,5W	
3396	4822 116 52257	22K	5%	0,5W	
3397	4822 051 20101	100E	5%	0,5W	
3398	4822 051 20101	100E	5%	0,5W	
3400	4822 116 83864	10K	5%	0,5W	
3401	4822 116 83864	10K	5%	0,5W	
3402	4822 050 11002	1K00	1%	0,4W	
3403	4822 116 52256	2K2	5%	0,5W	
3404	4822 116 83864	10K	5%	0,5W	
3405	4822 116 83876	270E	5%	0,5W	
3406	4822 116 83864	10K	5%	0,5W	
3407	4822 116 83864	10K	5%	0,5W	
3408	4822 116 52256	2K2	5%	0,5W	
3410	4822 051 20472	4K70	5%	0,1W	
3411	4822 116 83864	10K	5%	0,5W	
3412	4822 116 52249	1K8	5%	0,5W	
3413	4822 050 11002	1K00	1%	0,4W	
3414▲	4822 052 10109	10R00	5%	0,33W	
3415▲	4822 052 10109	10R00	5%	0,33W	
3416	4822 116 52257	22K	5%	0,5W	
3417	4822 116 52283	4K7	5%	0,5W	
3418	4822 050 11002	1K00	1%	0,4W	
3419	4822 051 20472	4K70	5%	0,1W	
3420	4822 117 10833	10K	1%	0,1W	
3421	4822 116 83864	10K	5%	0.5W	
3423	4822 116 83876	270R	5%	0,5W	
3424	4822 116 52256	2K2	5%	0,5W	
3430	4822 116 52249	1K8	5%	0.5W	
3431	4822 116 52276	3K9	5%	0,5W	
3432	4822 116 83864	10K	5%	0,5W	
3433	4822 116 52256	2K2	5%	0,5W	
3434	4822 116 52257	22K	5%	0,5W	
3435	4822 116 83864	10K	5%	0,5W	
3436	4822 050 11002	1K00	1%	0.4W	
3437	4822 116 83961	6K8	5%	0,5W	
3438	4822 051 20472	4K70	5%	0,1W	
3440▲	4822 052 10228	2R20	5%	0.33W	
3441	4822 116 80176	1E	5%	0,5W	
3442	4822 116 52304	82K	5%	0,5W	
3443	4822 116 52257	22K	5%	0,5W	
3444	4822 116 52276	3K9	5%	0,5W	
3445	4822 116 83864	10K	5%	0.5W	
3446	4822 116 52257	22K	5%	0,5W	
3447	4822 116 52257	22K	5%	0,5W	
3448	4822 116 83864	10K	5%	0,5W	
3449	4822 117 10833	10K	1%	0,1W	
3450	4822 116 52256	2K2	5%	0,5W	
3451	4822 116 83864	10K	5%	0.5W	
3452	4822 116 52249	1K8	5%	0,5W	
3453	4822 116 52283	4K7	5%	0,5W	
3454	4822 116 52283	4K7	5%	0,5W	
3455	4822 116 52283	4K7	5%	0,5W	
3456	4822 117 10833	10K	1%	0,1W	
3457	4822 050 11002	1K00	1%	0.4W	
3458	4822 051 20223	22K00	5%	0,1W	
3459	4822 116 83876	270E	5%	0,5W	
3460	4822 116 83884	47K	5%	0,5W	
3461	4822 051 20472	4K70	5%	0,1W	
3462	4822 051 20563	56K00	5%	0,1W	
3463	4822 116 52283	4K7	5%	0,5W	
3464	4822 116 52256	2K2	5%	0,5W	
3466	4822 116 83864	10K	5%	0,5W	
3469	4822 116 83876	270E	5%	0,5W	
3470	4822 116 52264	27K	5%	0,5W	
3471	4822 116 52222	390E	5%	0,5W	
3472	4822 116 52264	27K	5%	0,5W	
3473	4822 116 52222	390E	5%	0,5W	
3474	4822 116 83864	10K	5%	0,5W	
3475	4822 116 52289	5K6	5%	0,5W	
3476	4822 116 52222	390E	5%	0,5W	
3477	4822 116 52283	4K7	5%	0,5W	
3478	4822 051 20104	100K00	5%	0,1W	
3479	4822 116 52283	4K7	5%	0,5W	
3480	4822 116 83884	47K	5%	0,5W	
3481	4822 116 52256	2K2	5%	0,5W	
3482	4822 116 52257	22K	5%	0,5W	
3483	4822 116 83864	10K	5%	0,5W	
3484	4822 116 52283	4K7	5%	0,5W	
3488	4822 051 20471	470R00	5%	0,1W	
3489	4822 116 52283	4K7	5%	0,5W	
3490	4822 116 83872	220R	5%	0,5W	
3491	4822 116 83884	47K	5%	0,5W	
3492	4822 051 20473	47K00	5%	0,1W	
3493	4822 051 20225	2M20	5%	0,1W	
3494	4822 051 20104	100K00	5%	0,1W	
3495	4822 051 20104	100K00	5%	0,1W	
3496	4822 051 20472	4K70	5%	0,1W	
3497	4822 051 20472	4K70	5%	0,1W	
3498	4822 051 20472	4K70	5%	0,1W	
3499	4822 116 52283	4K7	5%	0,5W	
3501	4822 051 10102	1K00	2%	0,25W	
3502	4822 051 10102	1K00	2%	0,25W	
3503	4822 051 10102	1K00	2%	0,25W	
3505	4822 051 20759	75R00	5%	0,1W	
3509	4822 051 20008	0R00 JUMP (0805)			
3510	4822 051 20008	0R00 JUMP (0805)			
3512	4822 051 20682	6K80	5%	0,1W	
3513	4822 116 83872	220E	5%	0,5W	
3514	4822 116 83961	6K80	5%		

▲... Safety component, use only this type

3515	4822 051 20682	6K80	5%	0,1W
3516	4822 117 11503	220R	1%	0,1W
3517	4822 116 52234	100K	5%	0,5W
3518	4822 116 52234	100K	5%	0,5W
3519	4822 051 20822	8K20	5%	0,1W
3520	4822 117 10353	150R	1%	0,1W
3521	4822 116 83961	6K8	5%	
3522	4822 051 20821	820R00	5%	0,1W
3523	4822 051 20008	0R00 JUMP (0805)		
3524	4822 051 20759	75R00	5%	0,1W
3525	4822 051 20822	8K20	5%	0,1W
3526	4822 117 11449	2K20	1%	0,1W
3527	4822 051 20472	4K70	5%	0,1W
3528	4822 116 83884	47K	5%	0,5W
3529	4822 051 20759	75R00	5%	0,1W
3530	4822 051 20472	4K70	5%	0,1W
3531	4822 051 20101	100R00	5%	0,1W
3532	4822 051 20101	100R00	5%	0,1W
3533	4822 051 20759	75R00	5%	0,1W
3534	4822 051 20008	0R00 JUMP (0805)		
3535	4822 117 11503	220E	1%	0,1W
3536	4822 117 11503	220E	1%	0,1W
3537	4822 116 83872	220E	5%	0,5W
3538	4822 116 83961	6K8	5%	
3539	4822 116 83961	6K8	5%	
3540	4822 117 11503	220E	1%	0,1W
3542	4822 117 11503	220E	1%	0,1W
3543	4822 051 20471	470R00	5%	0,1W
3544	4822 117 11503	220R	1%	0,1W
3545	4822 116 52256	2K2	5%	0,5W
3546	4822 116 52256	2K2	5%	0,5W
3547	4822 051 20479	47R00	5%	0,1W
3548	4822 051 20682	6K80	5%	0,1W
3549	4822 051 20101	100R00	5%	0,1W
3550	4822 051 20105	1M00	5%	0,1W
3551	4822 051 20105	1M00	5%	0,1W
3552	4822 051 20682	6K80	5%	0,1W
3553	4822 051 20101	100R00	5%	0,1W
3554	4822 051 20101	100R00	5%	0,1W
3555	4822 051 20008	0R00 JUMP (0805)		
3556	4822 051 20474	470K00	5%	0,1W
3557	4822 051 20104	100K00	5%	0,1W
3560	4822 051 20008	0R00 JUMP (0805)		
3561	4822 051 20472	4K70	5%	0,1W
3562	4822 051 20473	47K00	5%	0,1W
3563	4822 051 20822	8K20	5%	0,1W
3570	4822 116 83864	10K	5%	0,5W
3571	4822 117 11383	12K	1%	0,1W
3600	4822 116 52257	22K	5%	0,5W
3601	4822 117 10833	10K	1%	0,1W
3602	4822 051 20472	4K70	5%	0,1W
3603	4822 051 20101	100R00	5%	0,1W
3604	4822 116 52257	22K	5%	0,5W
3605	4822 117 11449	2K2	1%	0,1W
3606	4822 116 52195	47E	5%	0,5W
3607	4822 051 20394	390K00	5%	0,1W
3608	4822 117 11383	12K	1%	0,1W
3609	4822 051 20822	8K20	5%	0,1W
3610	4822 117 11449	2K2	1%	0,1W
3611	4822 051 20101	100R00	5%	0,1W for mono
3611	4822 051 20681	680R00	5%	0,1W for stereo
3612	4822 117 11449	2K2	1%	0,1W
3615	4822 051 20101	100R00	5%	0,1W
3618	4822 100 12159	100K	30%	POT
3619	4822 051 20158	1R50	5%	0,1W
3620	4822 051 20473	47K00	5%	0,1W
3622	4822 051 20335	3M30	5%	0,1W
3623	4822 117 10833	10K	1%	0,1W
3624	4822 051 20332	3K30	5%	0,1W
3625	4822 051 20339	33R00	5%	0,1W
3626	4822 051 20224	220K00	5%	0,1W
3627	4822 051 20563	56K00	5%	0,1W
3638	4822 051 20109	10R00	5%	0,1W
3655	4822 051 20681	680R00	5%	0,1W
3656	4822 116 83961	6K8	5%	

3657	4822 051 20391	390R00	5%	0,1W
3702	4822 051 20101	100R00	5%	0,1W
3703	4822 051 20101	100R00	5%	0,1W
3704	4822 051 20182	1k80	5%	0,1W
3705	4822 051 20223	22K00	5%	0,1W
3706	4822 051 20182	1k80	5%	0,1W
3707	4822 051 20101	100R00	5%	0,1W
3708	4822 051 20101	100R00	5%	0,1W
3709	4822 051 20101	100R00	5%	0,1W
3712	4822 051 20272	2K70	5%	0,1W
3715	4822 051 20122	1K20	5%	0,1W
3723	4822 051 20224	220K00	5%	0,1W
3725	4822 051 20333	33K00	5%	0,1W
3726	4822 051 20273	27K00	5%	0,1W
3729	4822 051 20391	390R00	5%	0,1W
3730	4822 051 20183	18K00	5%	0,1W
3731	4822 051 20183	18K00	5%	0,1W
3732	4822 051 20391	390R00	5%	0,1W
3735	4822 117 11448	180R	1%	0,1W for mono SEC
3735	4822 051 20391	390R00	5%	0,1W for stereo
3736	4822 051 20562	5K60	5%	0,1W
3737	4822 051 20392	3K90	5%	0,1W
3739	4822 051 20681	680R00	5%	0,1W
3742	4822 100 12158	22K	30%	POT
3744	4822 051 20154	150K00	5%	0,1W
3747	4822 051 20391	390R00	5%	0,1W for SECAM
3747	4822 051 20331	330R00	5%	0,1W for SEC DK
3747	4822 051 20271	270E	5%	0,1W for PAL
3748	4822 100 12156	4K7		POT for PLL adj.
3748	4822 100 12158	22K		POT for Bd. 1 adj.
3749	4822 051 20681	680R00	5%	0,1W
3750	4822 051 20331	330R00	5%	0,1W
3760	4822 051 10102	1K00	2%	0,25W
3760	4822 051 20821	820R00	5%	0,1W for PAL I
3761	4822 051 10102	1K00	2%	0,25W
3762	4822 051 10102	1K00	2%	0,25W
3764	4822 051 10102	1K00	2%	0,25W for PAL
3764	4822 051 20821	820R00	5%	0,1W for SECAM
3765	4822 051 20562	5K60	5%	0,1W
3766	4822 051 20473	47K00	5%	0,1W
3767	4822 051 20472	4K70	5%	0,1W
3768	4822 051 20104	100K00	5%	0,1W
3769	4822 051 20472	4K70	5%	0,1W
3770	4822 051 20104	100K00	5%	0,1W
3771	4822 051 20472	4K70	5%	0,1W
3772	4822 051 20104	100K00	5%	0,1W
3773	4822 051 20104	100K00	5%	0,1W
3780	4822 051 20101	100R00	5%	0,1W
3781	4822 051 20101	100R00	5%	0,1W
3782	4822 051 20333	33K00	5%	0,1W
3790	4822 051 20472	4K70	5%	0,1W
3790	4822 051 20008	0R0 jump		for K'-NIC
3791	4822 051 20562	5K60	5%	0,1W
3791	4822 117 11507	6k80	1%	0,1W for K'-NIC
3792	4822 051 20472	4K70	5%	0,1W
3793	4822 051 20562	5K60	5%	0,1W
3805	4822 051 20101	100R00	5%	0,1W
3807	4822 051 20479	47R00	5%	0,1W
3808	4822 051 20479	47R00	5%	0,1W
3813	4822 051 20472	4K70	5%	0,1W
3815	4822 117 10833	10K	1%	0,1W
3816	4822 117 10833	10K	1%	0,1W
3817	4822 117 10833	10K	1%	0,1W
3818	4822 051 20153	15K00	5%	0,1W
3819	4822 117 10833	10K	1%	0,1W
3820	4822 117 10833	10K	1%	0,1W
3821	4822 117 10833	10K	1%	0,1W
3822	4822 051 20153	15K00	5%	0,1W
3823	4822 117 10833	10K	1%	0,1W
3824	4822 117 11449	2K2	1%	0,1W
3825	4822 051 20472	4K70	5%	0,1W
3826	4822 051 20153	15K00	5%	0,1W
3827	4822 051 20104	100K00	5%	0,1W
3828	4822 117 10833	10K	1%	0,1W
3829	4822 117 10833	10K	1%	0,1W

⚠... Safety component, use only this type

3850	4822 117 12708	39K	1%	0,1W
3851	4822 051 20473	47K00	5%	0,1W
3852	4822 051 20392	3K90	5%	0,1W
3853	4822 051 20473	47K00	5%	0,1W
3854	4822 051 20392	3K90	5%	0,1W
3855	4822 051 20104	100K00	5%	0,1W
3856	4822 051 20104	100K00	5%	0,1W
3857	4822 051 20335	3M30	5%	0,1W
3858	4822 117 11449	2K2	1%	0,1W
3860	4822 051 20101	100R00	5%	0,1W
3861	4822 051 20101	100R00	5%	0,1W
3862	4822 051 20104	100K00	5%	0,1W
3863	4822 051 20104	100K00	5%	0,1W
3864	4822 051 20472	4K70	5%	0,1W
3865	4822 051 20472	4K70	5%	0,1W
3866	4822 051 20475	4M70	5%	0,1W
3867	4822 051 20475	4M70	5%	0,1W
3870	4822 051 20472	4K70	5%	0,1W
3871	4822 051 20223	22K00	5%	0,1W
3901	4822 051 20008	0R00 JUMP (0805)		
3902	4822 051 20008	0R00 JUMP (0805)		
3903	4822 051 20008	0R00 JUMP (0805)		
3905	4822 051 20008	0R00 JUMP (0805)		
3906	4822 051 20008	0R00 JUMP (0805)		
3907	4822 051 20008	0R00 JUMP (0805)		
3908	4822 051 20008	0R00 JUMP (0805)		
3910	4822 051 20008	0R00 JUMP (0805)		
3911	4822 051 20008	0R00 JUMP (0805)		
3912	4822 051 20008	0R00 JUMP (0805)		
3913	4822 051 20008	0R00 JUMP (0805)		
3915	4822 051 20008	0R00 JUMP (0805)		
3916	4822 051 20008	0R00 JUMP (0805)		
3917	4822 051 20008	0R00 JUMP (0805)		
3918	4822 051 20008	0R00 JUMP (0805)		
3919	4822 051 20008	0R00 JUMP (0805)		
3922	4822 051 20008	0R00 JUMP (0805)		
3923	4822 051 20008	0R00 JUMP (0805)		
3925	4822 051 20008	0R00 JUMP (0805)		
3925	4822 051 20562	5K6	5%	0,1W for K'-NIC
3926	4822 051 20008	0R00 JUMP (0805)		
3927	4822 051 20008	0R00 JUMP (0805)		
3928	4822 051 20008	0R00 JUMP (0805)		
3929	4822 051 20008	0R00 JUMP (0805)		
3930	4822 051 20008	0R00 JUMP (0805)		
3931	4822 051 20008	0R00 JUMP (0805)		
3941	4822 051 20008	0R00 JUMP (0805)		
3942	4822 051 20008	0R00 JUMP (0805)		
3943	4822 051 20008	0R00 JUMP (0805)		
3944	4822 051 20008	0R00 JUMP (0805)		
3945	4822 051 20008	0R00 JUMP (0805)		
3946	4822 051 20008	0R00 JUMP (0805)		
3947	4822 051 20008	0R00 JUMP (0805)		
3950	4822 051 20008	0R00 JUMP (0805)		
3951	4822 051 20008	0R00 JUMP (0805)		
3956	4822 051 20008	0R00 JUMP (0805)		
3960	4822 051 20008	0R00 JUMP (0805)		
3961	4822 051 20008	0R00 JUMP (0805)		
3962	4822 051 20008	0R00 JUMP (0805)		
3965	4822 051 20008	0R00 JUMP (0805)		
3966	4822 051 20008	0R00 JUMP (0805)		
3967	4822 051 20008	0R00 JUMP (0805)		
3970	4822 051 20008	0R00 JUMP (0805)		
3972	4822 051 20008	0R00 JUMP (0805)		
3973	4822 051 20008	0R00 JUMP (0805)		
3980	4822 051 20008	0R00 JUMP (0805)		
3981	4822 051 20008	0R00 JUMP (0805)		
3984	4822 051 20008	0R00 JUMP (0805)		
3985	4822 051 20008	0R00 JUMP (0805)		
3986	4822 051 20008	0R00 JUMP (0805)		
3988	4822 051 20008	0R00 JUMP (0805)		
3989	4822 051 20008	0R00 JUMP (0805)		
3990	4822 051 20008	0R00 JUMP (0805)		
3998	4822 051 20008	0R00 JUMP (0805)		
3999	4822 051 20008	0R00 JUMP (0805)		
4501	4822 117 10833	10K	1%	0,1W for STBY

4505	4822 117 10833	10K	1%	0,1W for STBY
4511	4822 117 10833	10K	1%	0,1W for STBY
4517	4822 117 10833	10K	1%	0,1W for STBY
4523	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4545	4822 117 10833	10K	1%	0,1W for STBY
4569	4822 051 20182	1K80	5%	0,1W for DOWN
4570	4822 051 20008	0R00 JUMP (0805)		for EJECT
4579	4822 051 20472	4K700	5%	0,1W for UP
4579	4822 117 12708	39K00	5%	0,1W for INST
4583	4822 051 20182	1K80	5%	0,1W for DOWN
4584	4822 117 12708	39K00	5%	0,1W for REC
4591	4822 117 12708	39K00	5%	0,1W for INST
4591	4822 051 20472	4K70	5%	0,1W for UP
4591	4822 051 20182	1K80	5%	0,1W for DOWN
4592	4822 117 12708	39K00	5%	0,1W for REC
4595	4822 117 12708	39K00	5%	0,1W for INST
4595	4822 051 20472	4K70	5%	0,1W for UP
4610	4822 117 12708	39K00	5%	0,1W for REC
4628	4822 117 12708	39K00	5%	0,1W for REC
4639	4822 051 20182	1K80	5%	0,1W for DOWN
4659	4822 051 20182	1K80	5%	0,1W for DOWN
4559	4822 051 20472	4K70	5%	0,1W for UP
4660	4822 117 12708	39K00	5%	0,1W for REC
4665	4822 117 12708	39K00	5%	0,1W for INST
4766	4822 051 20472	4K70	5%	0,1W for REW
4671	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4671	4822 051 20182	1K80	5%	0,1W for DOWN
4671	4822 051 20472	4K70	5%	0,1W for UP
4677	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4677	4822 051 20182	1K80	5%	0,1W for DOWN
4678	4822 117 10833	10K	1%	0,1W for WIND
4683	4822 051 20472	4K70	5%	0,1W for UP
4703	4822 117 12708	39K00	5%	0,1W for INST
4716	4822 051 20472	4K70	5%	0,1W for REW
4728	4822 051 20183	18K00	5%	0,1W for PLAY
4739	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4740	4822 051 20472	4K70	5%	0,1W for REW
4740	4822 051 20183	18K00	5%	0,1W for PLAY
4740	4822 051 20182	1K80	5%	0,1W for STOP
4742	4822 117 10833	10K	1%	0,1W for WIND
4745	4822 051 20472	4K70	5%	0,1W for UP
4746	4822 051 20183	18K00	5%	0,1W for PLAY
4746	4822 051 20472	4K70	5%	0,1W for REW
4752	4822 051 20472	4K70	5%	0,1W for REW
4758	4822 051 20472	4K70	5%	0,1W for REW
4758	4822 051 20183	18K00	5%	0,1W for PLAY
4764	4822 117 12708	39K00	5%	0,1W for INST
4764	4822 051 20183	18K00	5%	0,1W for PLAY
4764	4822 051 20472	4K70	5%	0,1W for REW
4764	4822 051 20008	0R00 JUMP (0805)		EJECT
4772	4822 117 10833	10K	1%	0,1W for WIND
4787	4822 051 20008	0R00 JUMP (0805)		for ST/EJ

COILS

5000	4822 157 11234	10µH	5%
5001	4822 152 20677	10µH	
5002	4822 152 20677	10µH	
5004	4822 157 11142	47µH	5%
5005	4822 157 11145	150µH	5%
5020	4822 157 10972	15µH	5%
5026	4822 157 11228	LAN02TB101J	
5036	4822 157 11149	56µH	5%
5080⚠	4822 157 11226	47µH	5%
5100	4822 157 63661	FIL LC VAR 4M286	5VS
5101	4822 157 10972	15µH	5%
5102	4822 157 11149	56µH	5%
5103	4822 157 63661	FIL LC VAR 4M286	5VS
5104	4822 157 11227	150µH	5%
5105	4822 157 11227	150µH	5%
5106	4822 157 11151	330µH	5%
5107	4822 157 11228	LAN02TB101J	
5108	4822 157 63659	FIL LC VAR 1G072	5V2
5111	4822 157 11229	15µH	5%

⚠... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

5112	4822 157 10972	15µH 5%	
5113	4822 157 11145	150µH 5%	
5114	4822 157 10972	15µH 5%	
5115	4822 157 63717	6,8µH	
5130	4822 157 71206	BLM21A10PT	
5150▲	4822 157 53906	47µH	
5200	4822 152 20677	10µH	
5300▲	4822 157 53005	0.33µH 20%	
5350	4822 157 51462	10µH	
5351	4822 157 71461	22µH 10%	
5352▲	4822 157 10454	Line filter	
5353▲	4822 146 10786	SRW32ES-E01(TRAFO)	
5353/80	4822 466 11688	ISOL. PLATE (TRAFO 5353)	
5354	4822 157 51462	10µH	
5355▲	4822 157 53005	0,33µH	
5358	4822 157 60147	2,2µH	
5361	4822 157 52286	22µH	
5368	4822 157 60147	2,2µH	
5400	4822 152 20677	10µH	
5402	4822 152 20677	10µH	
5601	4822 157 11249	10.000UH 5%	
5602	4822 157 11151	330µH 5%	
5603	4822 157 53531	Coil	
5604	4822 157 11251	3,3µH 10%	
5605	4822 157 71206	BLM21A10PT	
5700	4822 157 71206	BLM21A10PT	
5702	4822 152 20677	10µH	
5703	4822 152 20677	10µH	
5705	4822 152 20677	10µH	
5720	4822 157 11231	LAN02TB1R0J	
5721	4822 157 70877	H292ONS-6785NK	
5725	4822 157 70877	H292ONS-6785NK	
5726	4822 051 20008	0R00 JUMP (0805)	
5740	4822 157 11232	12µH 5%	for SECAM LL'
5740	4822 157 11229	15µH 5%	for PAL
5741	4822 157 11223	39µH 5%	
5780	4822 157 70038	10mH 5%	
5800	4822 157 11233	LAN02TB330J	
5801	4822 152 20677	10µH	
5810	4822 157 11234	10µH 5%	
5831	4822 157 11235	LANO2TB220J	

DIODES

6100	4822 130 30621	1N4148	
6135	4822 130 34197	BZX79-B12 (MTZJ12C)	
6250	4822 130 34197	BZX79-B12	
6299	4822 130 31983	BAT85	
6350	4822 130 30842	BAV21	
6351	4822 130 31983	BAT85	
6352	4822 130 42488	BYD33D	
6353	4822 130 42488	BYD33D	
6354	4822 130 80858	1N5062	
6355	4822 130 42488	BYD33D	
6356	4822 130 42488	BYD33D	
6357	4822 130 10871	SBYV27-200	
6358	5322 130 31938	BYV27-200	
6359	4822 130 32715	SB340	for stereo
6359	4822 130 83909	BYW98-200RL	for mono
6360	4822 130 83147	DF06M	
6371	4822 130 42488	BYD33D	
6372	4822 130 34142	BZX79-B33	
6460	4822 130 10231	SET: 2x Sens + 1x Led	
6500	4822 130 34197	BZX79-B12	
6501	4822 130 34197	BZX79-B12	
6502	4822 130 34197	BZX79-B12	
6509	4822 130 34197	BZX79-B12	
6510	4822 130 34197	BZX79-B12	
6511	4822 130 10884	MTZJ18C	
6516	4822 130 34278	BZX79-B6V8	
6530	4822 130 10654	BAT254	
6601	4822 130 30861	BZX79-B7V5	
6760	4822 130 10414	BA792	
6761	4822 130 10414	BA792	

TRANSISTORS & IC's

7000	4822 130 42718	BFS20	
7001	4822 130 10872	PDTA124ET	
7002	4822 130 60511	BC847B	
7003	4822 209 15526	LC89980M	
7004	4822 130 42353	BFS20	
7005	5322 130 60508	BC857B	
7006	4822 130 60511	BC847B	
7007	4822 209 16883	LA71527M	
7008	5322 130 60508	BC857B	
7009	4822 130 10872	PDTA124ET	
7011	4822 130 60511	BC847B	
7020	4822 130 63732	PDTC124ET	
7021	5322 130 60508	BC857B	
7080	4822 209 90421	STV5712	
7085	4822 130 60511	BC847B	
7100	4822 130 60511	BC847B	
7101	4822 130 60511	BC847B	
7102	4822 209 73852	PMBT2369	
7103	4822 130 60511	BC847B	
7104	4822 130 63732	PDTC124ET	
7105	5322 130 60508	BC857B	
7106	4822 130 60511	BC847B	
7110	4822 209 90189	TDA4722/V2	
7150	4822 209 13121	STV5742	
7151	4822 209 15548	STV5744AD	
7153	4822 130 60511	BC847B	
7201	4822 209 17472	TMP87CS71F ADCM1-xP	
7201	4822 209 17473	TMP87CS71F ADCM2-xU	
7201	4822 209 17474	TMP87CS71F ADCM3-xU	
7201	4822 209 17475	TMP87CS71F ADCH1-xP	
7201	4822 209 17476	TMP87CS71F ADCH2-xU	
7201	4822 209 17477	TMP87CS71F ADCH3-xU	
7201	4822 209 17478	TMP87CS71F ADCH4-xU	
7201	4822 209 17479	TMP87CS71F ADCH5-xU	
7201	4822 209 17481	TMP87CS71F ADCF1-xP	
7201	4822 209 17482	TMP87CS71F ADCF2-xU	
7201	4822 209 17483	TMP87CS71F ADCF3-xU	
7202	4822 135 00283	25U39136SA (Display)	
7203	4822 212 30842	TSOP1736 (IR-receiver)	
7231	4822 130 63732	PDTC124ET	
7300	4822 209 13126	TDA5241	
7301	4822 130 10872	PDTA124ET	
7350▲	4822 130 63794	STP3NA60	
7350/2	4822 255 10387	COOLING BLOCK (HEAT SINK)	
7350/3	4822 502 14482	SCREW M3x6	
7351▲	4822 209 32126	SOC1012T (OPTO)	
7352	4822 209 81397	TL431CLpST	
7353	4822 130 10214	STD17N06	
7354	4822 209 90025	MC44603P	
7356	4822 130 60511	BC847B	
7357	4822 130 10214	STD17N06	
7358	4822 130 40995	BD438	
7359	4822 130 60511	BC847B	
7400	4822 209 17484	TMP91C642AF ATDP4-xU	
7420	4822 209 90313	L4812CV for stereo	
7420	4822 209 81726	MC7812CT for mono	
7440	4822 209 30146	L2722	
7455	4822 130 10872	PDTA124ET	
7456	4822 130 60511	BC847B	
7457	4822 130 60511	BC847B	
7458	4822 130 60511	BC847B	
7460	4822 209 30836	SAA1310/N2	
7461	4822 130 10231	SET: 2x Sens + 1x Led	
7462	4822 130 10231	SET: 2x Sens + 1x Led	
7463	4822 130 41344	BC337-40	
7464	4822 130 10233	TCRT5000L	
7465	4822 130 10233	TCRT5000L	
7466	4822 130 10234	TCST1030L	
7467	4822 130 60511	BC847B	
7468	4822 130 60511	BC847B	
7469	4822 130 60511	BC847B	
7500	4822 130 60511	BC847B	

▲... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

7501	5322 130 60508	BC857B
7502	4822 130 60511	BC847B
7505	4822 130 63732	PDTC124ET
7506	4822 130 10872	PDTA124ET
7507	4822 209 90016	STV6400
7510	5322 130 42755	BC847C
7511	4822 130 42615	BC817-40
7512	5322 130 42755	BC847C
7513	5322 209 14481	HEF4053BT
7513	5322 209 14481	HEF4053BT
7540	4822 209 15504	SDA5650 for VPS/PDC
7540	4822 209 32728	SDA5642.6 for VPS only
7600	4822 130 60373	BC856B
7601	5322 130 60159	BC846B
7602	5322 130 60159	BC846B
7603	4822 130 60511	BC847B
7604	4822 130 41715	BC328-40
7609	4822 130 42615	BC817-40
7720	4822 209 90288	TDA9800T/V3
7721	4822 209 90018	TDA9812T for SECAM mono
7721	4822 209 90431	TDA9813T/V2 for PAL FM stereo
7721	4822 209 90452	TDA9814T/V3 for SECAM stereo
7722	5322 209 14481	HEF4053BT
7723	5322 130 60508	BC857B
7724	5322 130 42755	BC847C
7725	4822 130 60511	BC847B
7726	4822 130 63732	PDTC124ET
7728	4822 130 10802	BSS138
7729	4822 130 60511	BC847B
7730	4822 130 60511	BC847B
7731	4822 130 63732	PDTC124ET
7780	4822 209 32501	TDA9840T/V2
7800	4822 209 15524	LC74781-9663
7810	4822 130 42718	BFS20
7850	4822 209 15525	TDA9604H/N1
7851	4822 130 60511	BC847B
7852	4822 130 60511	BC847B
7860	4822 209 60177	LM339D
7890	4822 209 33113	ST24C08CB6 for GEMSTAR
7890	4822 209 30953	ST24C04CB6

▲... Safety component, use only this type

MISCELLANEOUS

1700⚠ 4822 071 52501	Fuse	250mA	
1710 4822 242 10433	Crystal	8,192 MHz	
1970 4822 265 10943	CONN	11P	

CAPACITORS

2700	4822 122 33172	390pF	5%	50V
2701	5322 122 32448	10pF	5%	50V
2703	4822 126 10002	100nF	20%	25V
2704	4822 122 33575	220pF	5%	50V
2705	4822 124 22826	10µF		16V
2706	4822 124 22826	10µF		16V
2707	4822 126 13061	220nF	20%	25V
2708	5322 122 32654	22nF	10%	63V
2709	5322 122 32531	100pF	5%	50V
2710	5322 122 32531	100pF	5%	50V
2714	4822 124 23027	47µF		6.3V
2716	4822 124 23027	47µF		6.3V
2718	4822 126 10002	100nF	20%	25V
2719	4822 122 33175	2,2nF	20%	50V
2720	4822 122 33175	2,2nF	20%	50V
2721	4822 126 13061	220nF	20%	25V
2722	4822 122 33175	2.2nF	20%	50V
2723	4822 122 33175	2.2nF	20%	50V
2725	4822 124 23053	1µF	20%	63V
2726	4822 122 33797	47nF	20%	50V
2727	4822 124 23027	47µF		6.3V
2728	4822 126 10002	100nF	20%	25V
2729	4822 124 22826	10µF		16V
2731	4822 124 22826	10µF		16V
2732	4822 126 10002	100nF	20%	25V
2733	4822 124 23027	47µF		6.3V
2734	5322 122 32654	22nF	10%	63V
2736	4822 126 10002	100nF	20%	25V
2752	4822 126 13061	220nF	20%	25V
2753	4822 126 13061	220nF	20%	25V

RESISTORS

3700	4822 051 10102	1K	2%	0,25W
3701	4822 051 20101	100R	5%	0,1W
3702	4822 051 20223	22K	5%	0,1W
3703	4822 051 20104	100K	5%	0,1W
3704	4822 117 11449	2K2	1%	0,1W
3705	4822 051 20392	3K9	5%	0,1W
3707	4822 116 52276	3K9	5%	0,5W
3708	4822 117 11449	2K2	1%	0,1W
3710	4822 051 20334	330K	5%	0,1W
3711	4822 116 52175	100E	5%	0,5W
3712	4822 116 52175	100E	5%	0,5W
3713	4822 051 20182	1K8	5%	0,1W
3714	4822 051 20333	33K	5%	0,1W
3715	4822 117 10833	10K	1%	0,1W
3720	4822 117 10833	10K	1%	0,1W
3721	4822 117 10833	10K	1%	0,1W
3722	4822 117 10833	10K	1%	0,1W
3723	4822 117 10833	10K	1%	0,1W
3790	4822 051 20008	0R00	JUMP (0805)	
3792	4822 051 20008	0R00	JUMP (0805)	
3793	4822 051 20008	0R00	JUMP (0805)	
3794	4822 051 20008	0R00	JUMP (0805)	
3795	4822 051 20008	0R00	JUMP (0805)	
3796	4822 051 20008	0R00	JUMP (0805)	
3797	4822 051 20008	0R00	JUMP (0805)	

COILS

5700	4822 157 63717	6,8MµH
5703	4822 157 71206	BLM21A10
5704	4822 157 71206	BLM21A10
5705	4822 157 71206	BLM21A10
5706	4822 157 71206	BLM21A10
5707	4822 157 71206	BLM21A10

DIODES

6700	4822 130 10652	BB149
6701	4822 130 83757	BAS216

TRANSISTORS & IC's

7700	4822 209 14809	SAA7284Z
7701	5322 209 61487	LM358N

⚠... Safety component, use only this type

CABLES

8001	4822 320 11889	FFC TD1-1961
8002	4822 323 10374	CABLE TREE TD2-1962
8003	4822 320 11891	FFC TD3-1944
8004	4822 320 11892	FFC TD4-1930
8005	4822 320 11888	FFC 1901-1945
8006	4822 320 12343	FFC 1103-1711
8007	4822 320 11891	FFC 1710-1750
8008	4822 323 10373	ESD-GND CONN.
⚠	4822 321 10886	MAINS CORD (+FUSE) for UK
⚠	4822 321 10249	MAINS CORD
	4822 320 50377	ANTENNA cable
	4822 321 63002	SCART cable

SUB MODULS

4822 214 12236	QNIC Nicam print
4822 214 12238	CINCH print rear
4822 214 13088	ASP10 Shuttle print
4822 214 13089	ACP10 CINCH print front

⚠... Safety component, use only this type